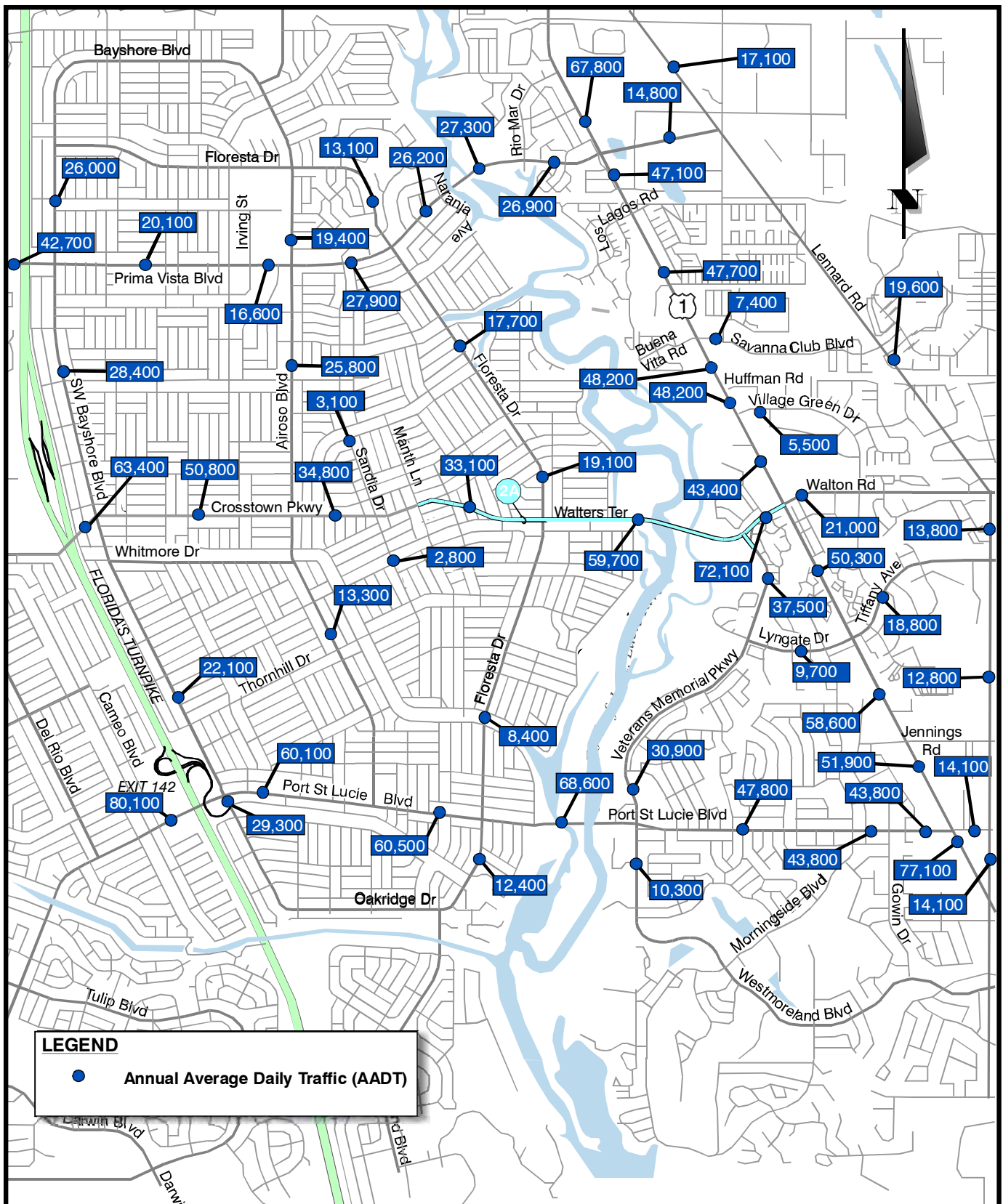


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Crosstown Parkway Extension PD&E Study and
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 Alternative 2A Opening Year (2017) AADT
 Figure 3.29



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 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Alternative 2A Design Year (2037) AADT
 Figure 3.30

The intersection and arterial operations analyses were performed for Prima Vista Boulevard, Port St. Lucie Boulevard, and U.S. 1 for the Opening (2017) and Design (2037) years for Alternative 2A. The detailed intersection and arterial analyses are presented in the DTTM. **Figures 3.31 and 3.32** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Opening (2017) year. **Figures 3.33 and 3.34** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Design (2037) year.

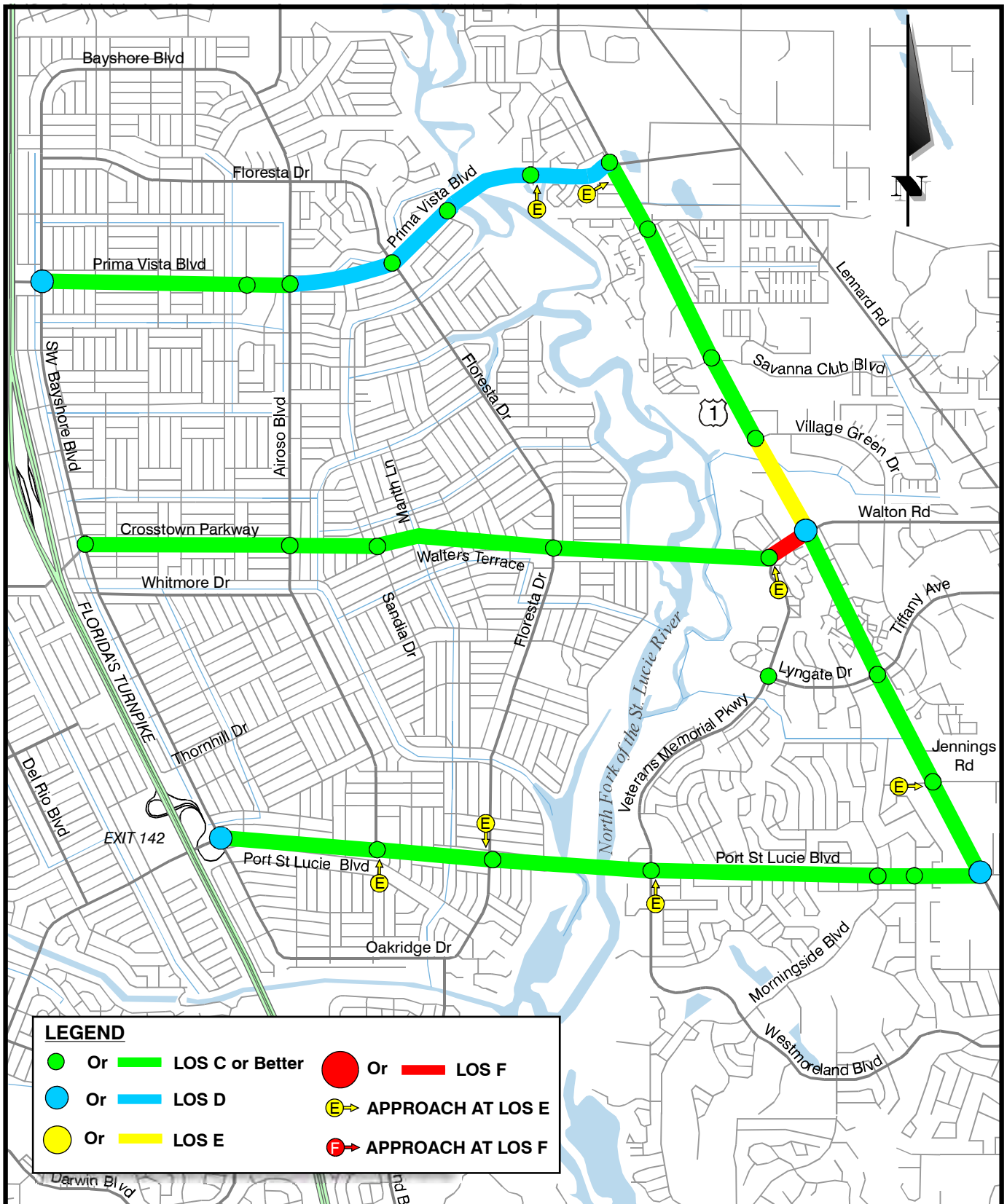
The Design (2037) year AM and PM peak-hour intersection analyses for Alternative 2A indicate that the Prima Vista Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM peak-hour arterial analysis for Prima Vista Boulevard indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS D. Finally, the PM peak-hour arterial analysis for Prima Vista Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS E, but the segment between Airoso Boulevard and U.S. 1 would operate at LOS D or better.

Alternative 2A is the southernmost alignment closest to Port St. Lucie Boulevard providing the highest diversion to Crosstown Parkway. The Design (2037) year AM peak-hour intersection analysis indicates that Alternative 2A and Veterans Memorial Parkway intersection would operate at LOS E. The PM peak-hour intersection analysis also indicates that Alternative 2A and U.S. 1/Walton Road intersection would operate at LOS E. The Alternative 2A and U.S. 1 intersection eastbound right-turn and northbound left-turn movements have the highest volumes compared to all other alternatives. Therefore, the proposed Alternative 2A and U.S. 1/Walton Road intersection would experience long queues in the Design (2037) year. The eastbound traffic at this intersection spills back to the upstream intersection (Alternative 2A and Veterans Memorial Parkway) due to the short distance between U.S. 1 and Veterans Memorial Parkway. The third northbound left-turn lane would require 800 feet of storage to prevent left-turning traffic from blocking the adjacent northbound through lane.

The Design (2037) year AM and PM peak-hour arterial analysis for Alternative 2A indicates that the roadway between Bayshore Boulevard and the proposed extension to Veterans Memorial Parkway would operate at LOS C. The AM and PM peak-hour arterial analysis also indicates that the proposed segment between Veterans Memorial Parkway and U.S. 1 would operate at LOS E and F, respectively.

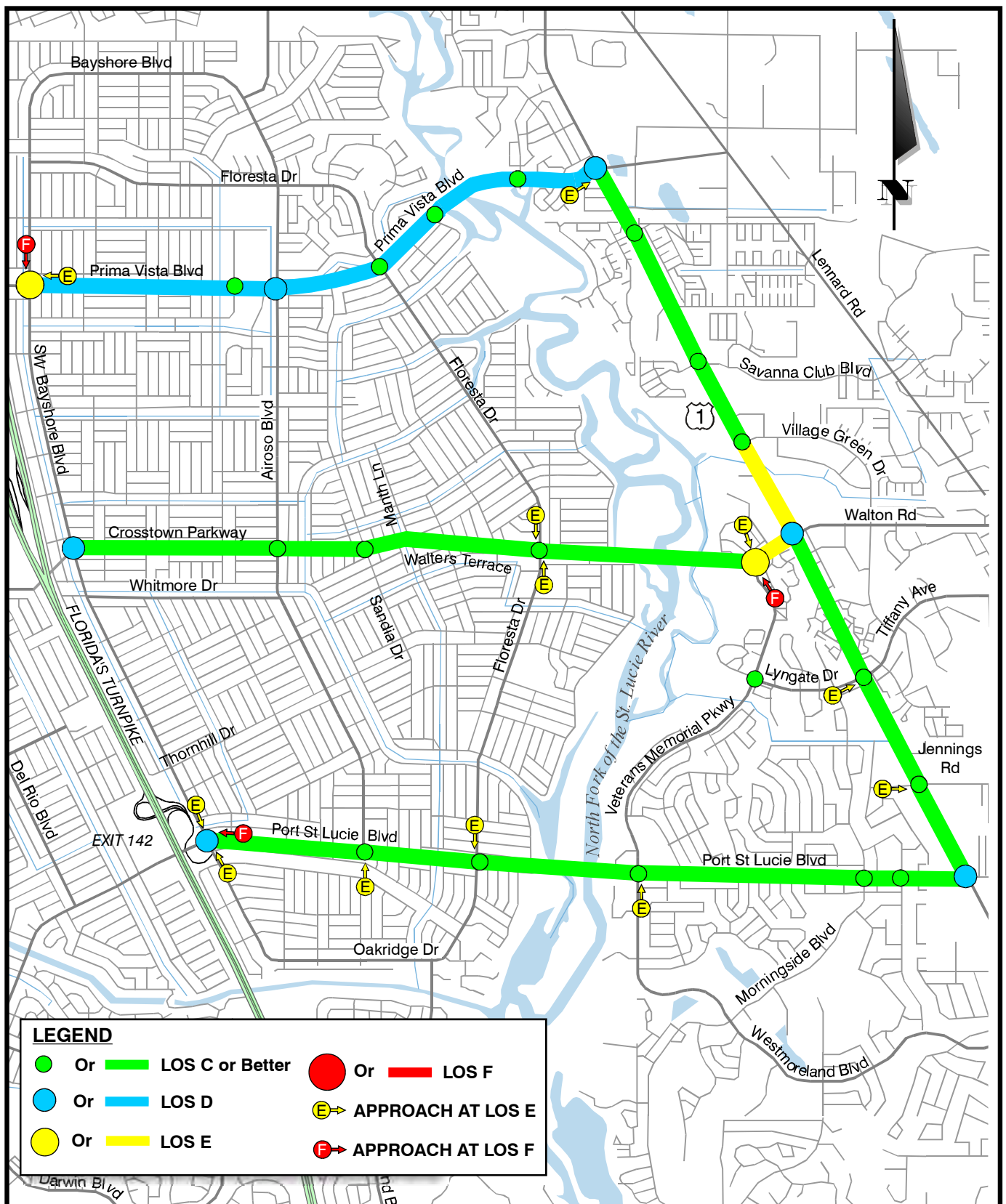
The Design (2037) year AM peak-hour intersection and arterial analyses for Alternative 2A indicate that the Port St. Lucie Boulevard intersections and roadway between Bayshore Boulevard and U.S. 1 would be operating at LOS D or better. Also, the Design (2037) year PM peak-hour intersection analysis indicates that Port St. Lucie Boulevard intersections with Bayshore Boulevard and Veterans Memorial Parkway would operate at LOS F and E, respectively. Finally, the PM peak-hour arterial analysis for Port St. Lucie Boulevard indicates that the segments between Bayshore Boulevard and Floresta Drive would operate at LOS F. However, the PM peak-hour arterial analysis also indicates that Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 would operate at LOS C.

As discussed in Section 3.2.4.1 (No Build Alternative Impacts), both Bayshore Boulevard intersections with Prima Vista Boulevard and Port St. Lucie Boulevard experience capacity deficiencies that could be addressed by localized intersection improvements. However, localized intersection upgrades at these two locations would not improve the capacity deficiencies on Prima Vista Boulevard and Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 in the No Build Alternative.



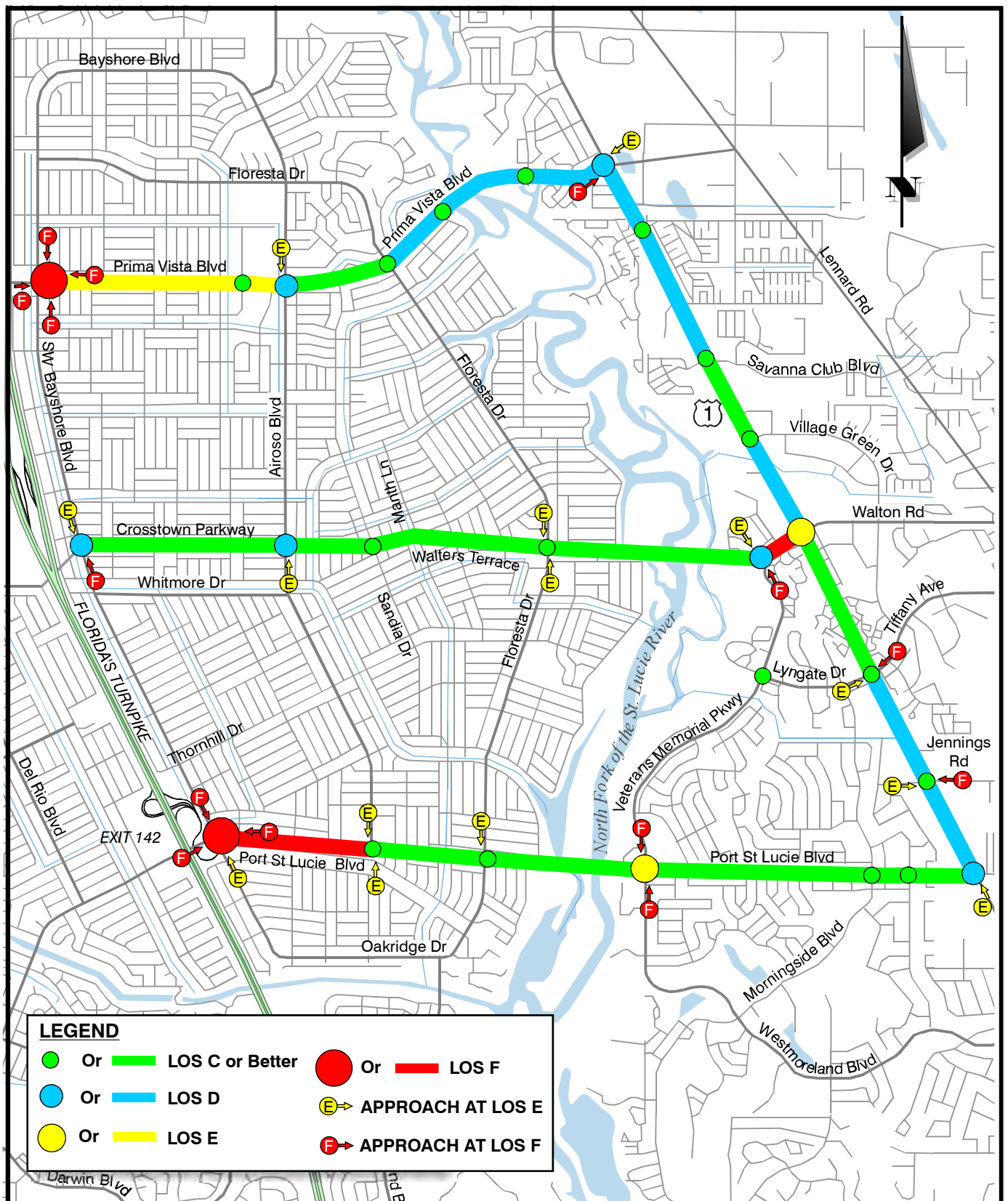
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 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 AM Peak Hour Level of Service-Alternative 2A
 Figure 3.31



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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 AM Peak Hour Level of Service-Alternative 2A
 Figure 3.33



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 PM Peak Hour Level of Service-Alternative 2A
 Figure 3.34

The Design (2037) year AM and PM peak-hour intersection analysis indicates that U.S. 1 intersections located north and south of the Crosstown Parkway and U.S. 1/Walton Road intersection would operate at LOS D or better. The AM peak-hour arterial analysis for U.S. 1 indicates that the segment between Village Green Drive and Alternative 2A would operate at LOS E. The PM peak-hour arterial analysis indicates that the entire roadway between Prima Vista Boulevard and Port St. Lucie Boulevard would operate at LOS D or better.

The Design (2037) year system performance measure base on CORSIM for Alternative 2A indicates 27.76 mph average speed and 0.95 min/mi of delay in the AM peak hour and 23.89 mph and 1.29 min/mi in the PM peak hour. The AM and PM peak-hour system-wide average speed improved by 17.4 percent and 29.3 percent, respectively, as compared to the No Build Alternative. The AM and PM peak-hour system-wide delay decreased by 25.8 percent and 35.5 percent, respectively, as compared to the No Build Alternative.

3.2.4.2.2.2 Social and Economic Impacts (2A)

Alternative 2A would relocate the highest number of occupied residential properties (141) compared to all build alternatives, and it traverses through an established neighborhood near its terminus with Manth Lane. If the number of previously purchased developed properties is included (4), a total of 145 residential relocations would be affected by this alternative. This alternative would traverse diagonally across four residential streets near the western terminus but would not cause the isolation of any neighborhoods because these streets are short blocks that do not connect to other neighborhood streets. This alternative would disrupt the largest number of continuous roadways in the area affecting local mobility. However, the impact to community cohesion would not be as great as Alternatives 1F, 6B, and 6A. An existing canal runs parallel to, and south of, Walters Terrace. The canal already provides an existing natural barrier to north-south travel between communities. The canal can currently be crossed only at Floresta Drive. Thus, Alternative 2A does not create major community disruptions to the extent of Alternatives 2D, 6B, and 6A west of the NFSLR.

This alternative would cause disruption to this community near the eastern terminus at U.S. 1 due to an additional new access connection into the community. Of the 141 occupied residential properties that would be acquired, it is estimated based on census data, that 32 minority households (22.70 percent of the total), 32 disabled households (22.70 percent of the total), and 23 elderly households (16.31 percent of the total) would need to be relocated. One day school business would be displaced (Lizzie's House, Inc., 907 SE Bywood Avenue). There are no other community facilities (non-Section 4(f) resources) that would be directly affected. However, it would have an indirect effect on Floresta Elementary School. This alternative would require the closure of Bywood Avenue to/from Floresta Drive, requiring an adjustment of access to/from the school (same as Alternative 2D).

Alternative 2A would remove approximately 0.11 percent of the City's tax base and 0.06 percent of the County's tax base. The analysis of property values showed that this alternative would not negatively affect property values near the new roadway.

3.2.4.2.2.3 Natural and Physical Resource Impacts (2A)

This alternative would alter the visual landscape for residents along Buckingham Terrace and Oakmont Lane. The views would change from a natural forested setting to views of an elevated bridge, roadway approach section, and the proposed stormwater ponds. Views by the residents south and east of Veterans Memorial Parkway would be incrementally changed from the divided 4-lane parkway to the proposed 6-lane urban roadway.

Alternative 2A has 158 residential units represented by 143 noise sensitive receptors. Of these, 33 receptors would have noise greater than the Noise Abatement Criteria if no noise barrier is used (impacted receptors). The noise barrier analysis revealed that 29 of the 33 impacted receptors could be benefited by a noise wall and four receptors could not be benefited by a noise wall.

It would have the lowest direct impact (7.64 acres) on wetlands (7.44 functional loss units, which includes direct and indirect impacts) and the most total impact on uplands (7.51 acres). These impacts are the same as Alternative 2D. It would have the third highest total impact on essential fish habitat (9.90 acres), which includes 7.64 acres of palustrine and mangrove habitats (same as wetlands) and 2.26 acres of open water habitat (primarily shading). These impacts are the same as Alternative 2D.

For purposes of Section 4(f), no bridging option appears to be feasible that would avoid the use of the AP. Thus, it would use lands from the AP (0.02 acres) and the SPSP (5.33 acres) the same as Alternative 2D. It would not use lands from Kiwanis Park.

3.2.4.2.3 Alternative 2D

Figure 3.35 depicts the alignment of Alternative 2D. The plan and profile view for the proposed bridge analyzed in this document is the same as Alternative 2A (**Figure 3.27**).

3.2.4.2.3.1 Traffic Considerations (2D)

As shown in **Figure 3.35**, Alternative 2D would extend Crosstown Parkway along West Virginia Drive to Floresta Drive. From there it would turn south along Floresta Drive and connect to Walters Terrace. Then, Alternative 2D (similar to Alternative 2A) would travel eastward via Walters Terrace across the NFSLR to Veterans Memorial Parkway (formerly known as Midport Road) east of the NFSLR, and ultimately connect with U.S. 1 at the existing signalized intersection with Veterans Memorial Parkway/Walton Road.

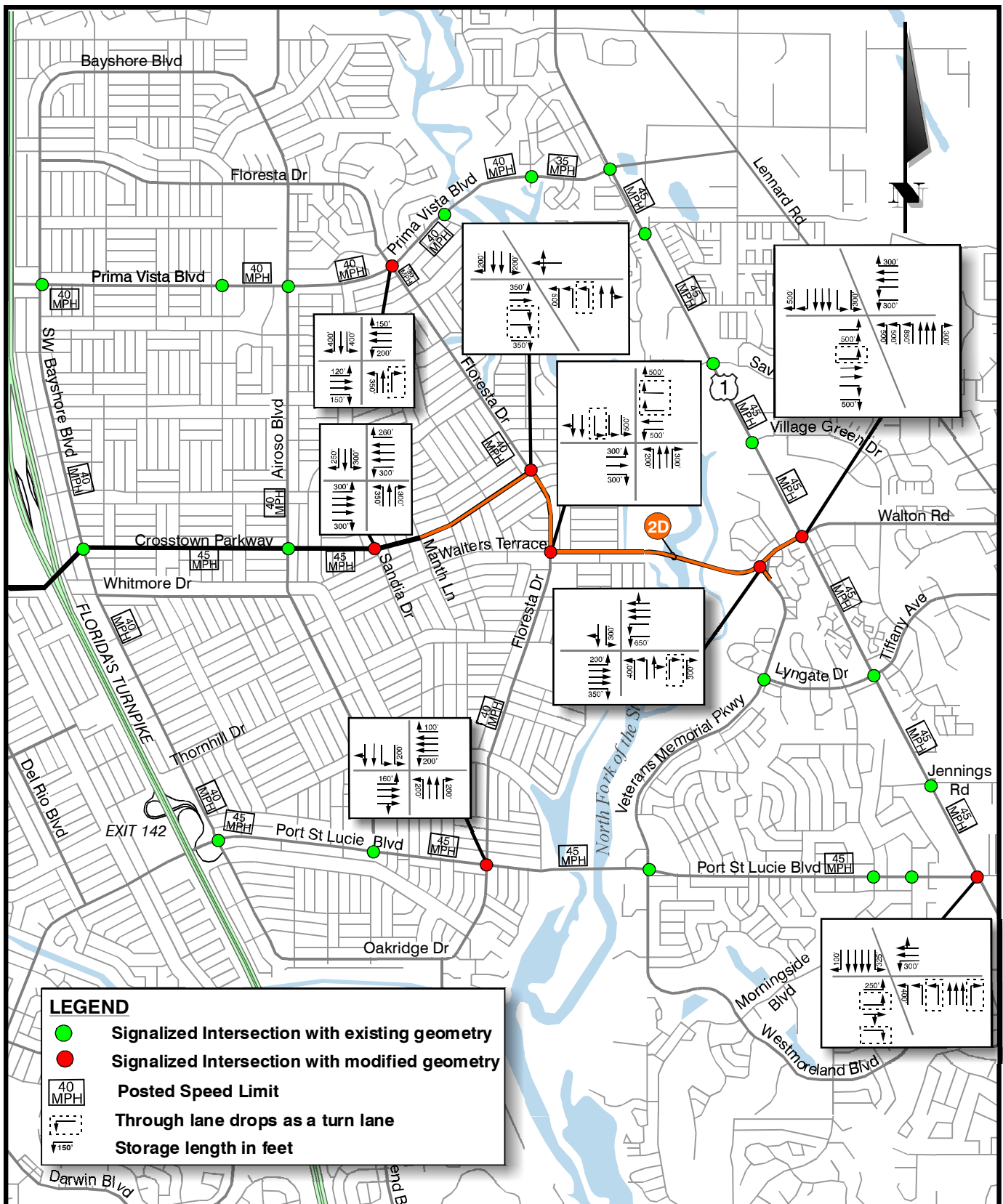
Crosstown Parkway Extension would intersect Veterans Memorial Parkway, approximately 1,500 feet west of U.S. 1. This alternative would create two new signalized intersections along Floresta Drive at Alternative 2D/West Virginia Drive and Alternative 2D/Walters Terrace where traffic would be required to make right-turn and left-turn movements. **Figure 3.36** shows Alternative 2D intersection geometry.

Because Alternative 2D would connect to an existing U.S. 1 intersection, a variance to the FDOT Access Management standards (Chapter 14-97 FAC) is not required. The standards require signal spacing along U.S. 1 of no less than one-half mile (2,640 feet).



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Crosstown Parkway Extension PD&E Study and
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 Alternative 2D Alignment
 Figure 3.35



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 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Alternative 2D Geometry
 Figure 3.36

The AADT forecasts for the Opening (2017) and Design (2037) years for Prima Vista Boulevard, Alternative 2D, Port St. Lucie Boulevard, and U.S. 1 are graphically shown in **Figures 3.37** and **3.38**, respectively. The AADT forecast for the Interim (2027) year was developed by linear interpolation between 2017 and 2037 AADT. As shown in **Table 3.18**, the east-west system daily capacity across the NFSLR would increase to 142,700 vehicles, and the combined AADT would be 155,000 in the Design (2037) year. The No Build Alternative would have a system daily capacity of 89,200 vehicles and a combined AADT of 138,000.

Table 3.18 Alternative 2D AADT Crossing the NFSLR

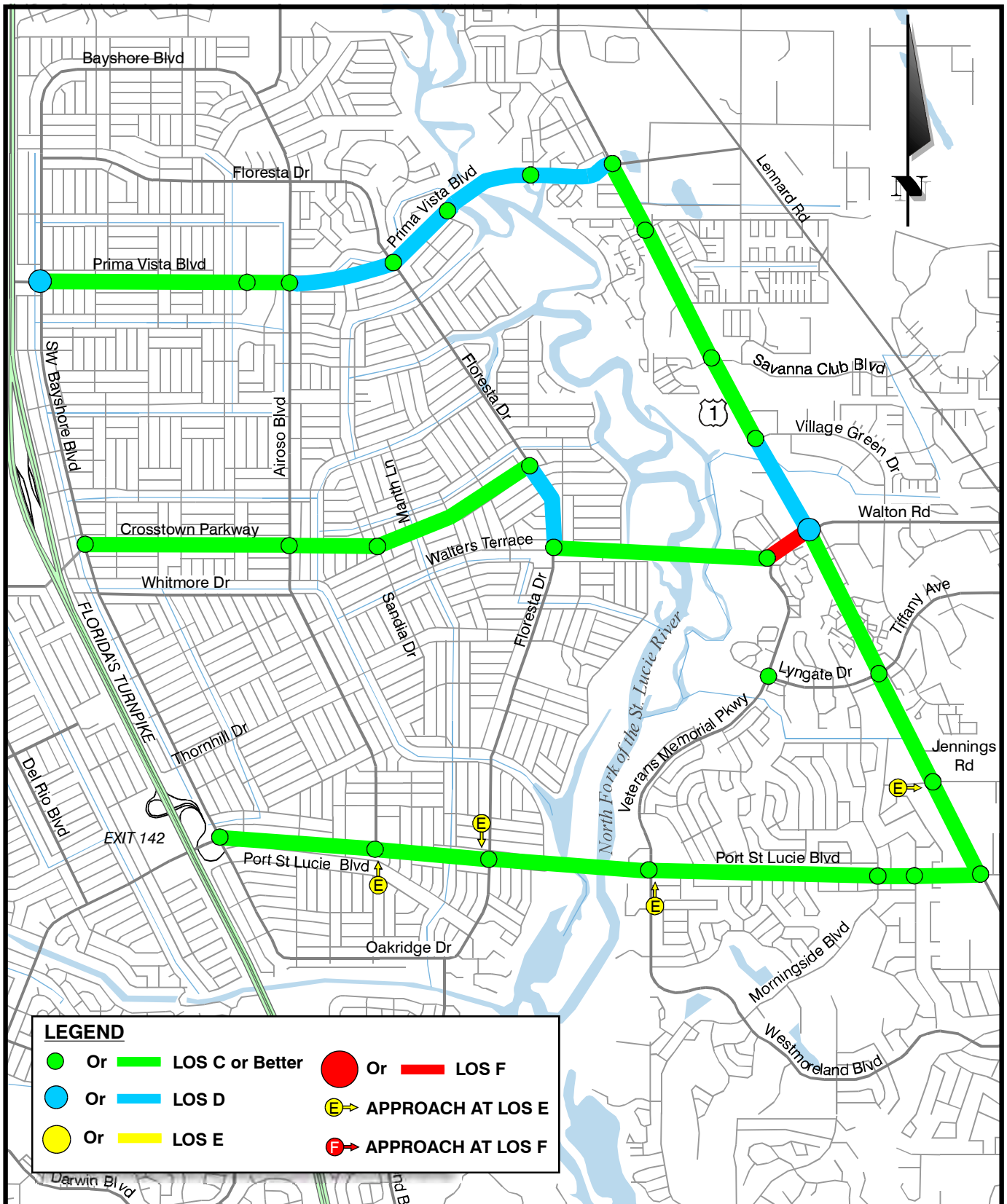
Location	AADT Crossing the NFSLR		
	Opening (2017)	Interim (2027)	Design (2037)
Prima Vista Boulevard	19,400	23,600	27,700
Crosstown Parkway	44,300	50,700	57,100
Port St. Lucie Boulevard	57,100	63,700	70,200
Total AADT (V = volume)	120,800	138,000	155,000
Total Capacity (C) ¹	142,700	142,700	142,700
Total V/C	0.85	0.97	1.09
Total AADT Exceeding Capacity (Three Bridges Combined)	n/a	n/a	12,300
¹ Combined capacity of all three NFSLR crossings.			

The AADT for the two existing bridges, compared to the No Build Alternative, suggests a traffic diversion of 43 percent from Prima Vista Boulevard and 22 percent from Port St. Lucie Boulevard to Alternative 2D in the Design (2037) year.

The intersection and arterial operations analyses were performed for Prima Vista Boulevard, Port St. Lucie Boulevard, and U.S. 1 for the Opening (2017) and Design (2037) years for Alternative 2D. The detailed intersection and arterial analysis is presented in the DTTM. **Figures 3.39** and **3.40** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Opening (2017) year. **Figures 3.41** and **3.42** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Design (2037) year.

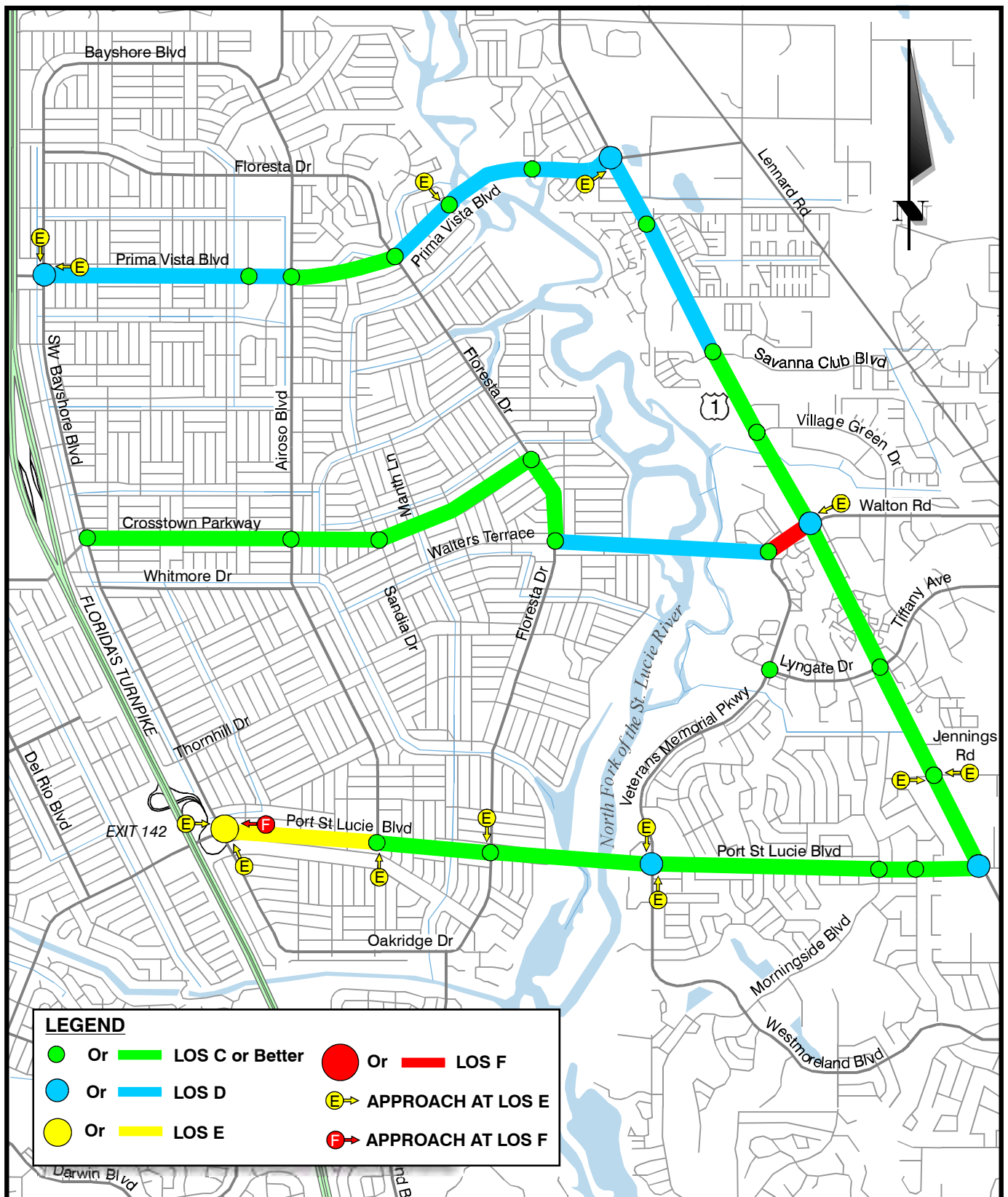
The Design (2037) year AM and PM peak-hour intersection analysis for Alternative 2D indicates that the Prima Vista Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM peak-hour arterial analysis for Prima Vista Boulevard indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS D. Finally, the PM peak-hour arterial analysis for Prima Vista Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS E, but the segment between Floresta Drive and U.S. 1 would operate at LOS D.

Alternative 2D provides the second highest (1 percent difference from Alternative 2A) traffic diversion to Crosstown Parkway. The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Alternative 2D and U.S. 1/Walton Road intersection would operate at LOS D and E, respectively. The eastbound right-turn and northbound left-turn movements at this intersection have high volumes similar to Alternative 2A. Therefore, Alternative 2D and U.S. 1/Walton Road intersection would experience long queues in the Design (2037) year similar to Alternative 2A. The eastbound traffic at this intersection spills



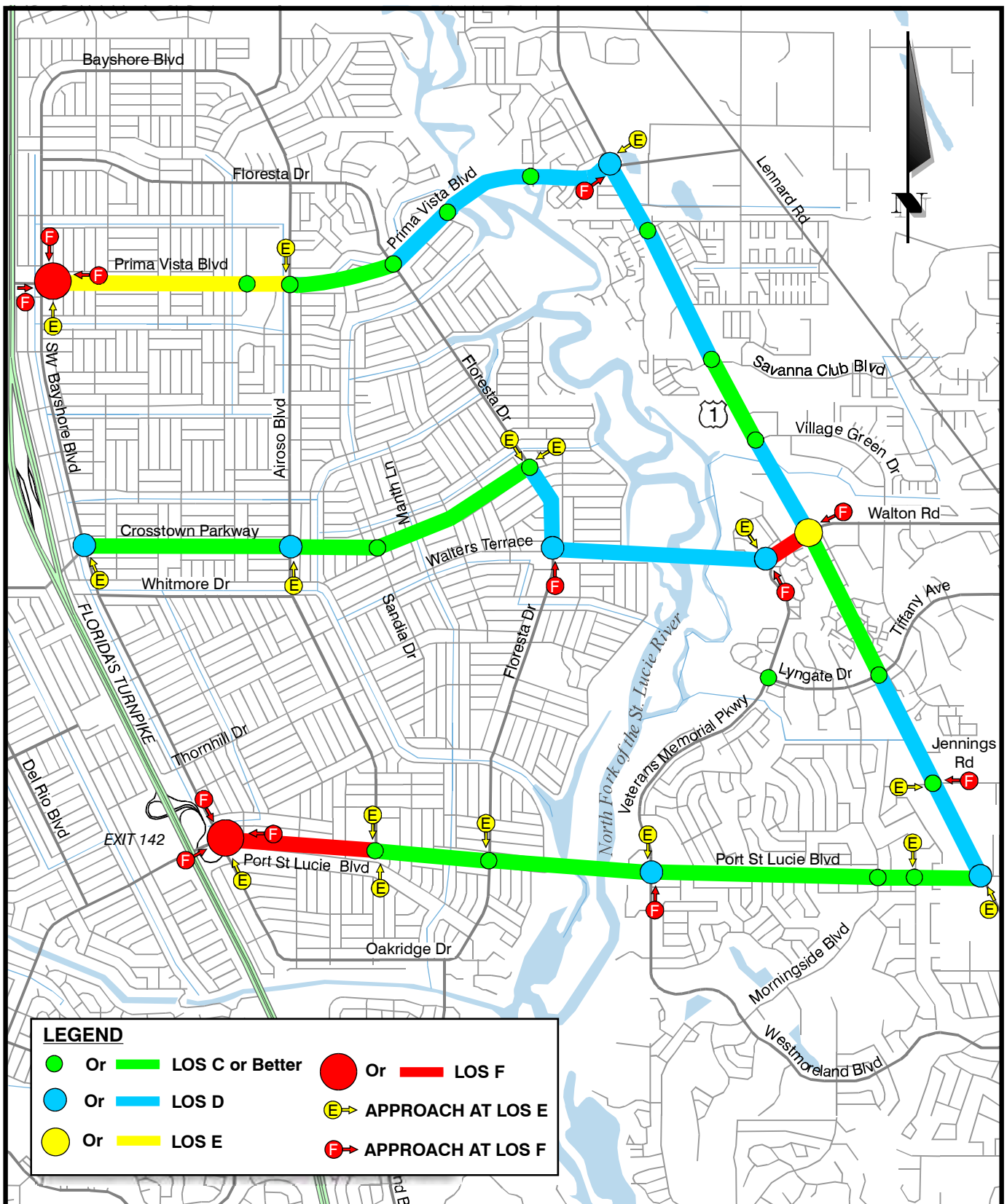
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 FP No. 7777-087-A
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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 AM Peak Hour Level of Service-Alternative 2D
 Figure 3.39



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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 PM Peak Hour Level of Service-Alternative 2D
Figure 3.40



FM No. 410844-1-28-01
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Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 2037 PM Peak Hour Level of Service-Alternative 2D
 Figure 3.42

back to the upstream intersection (Alternative 2D and Veterans Memorial Parkway) due to the short distance between U.S. 1 and Veterans Memorial Parkway. The third northbound left-turn lane would require 800 feet of storage to prevent left-turning traffic from blocking the adjacent northbound through lane.

The Design (2037) year AM and PM peak-hour arterial analysis for Alternative 2D indicates that the roadway between Bayshore Boulevard and Floresta Drive would operate at LOS C.

The AM and PM peak-hour arterial analysis for the north-south Alternative 2D along Floresta Drive between West Virginia Drive and Walters Terrace would operate at LOS E and LOS D, respectively. The AM and PM peak-hour arterial analysis of Alternative 2D between Floresta Drive and Veterans Memorial Parkway would operate at LOS C and LOS D, respectively. The AM and PM peak-hour arterial analysis also indicates that the segment between Veterans Memorial Parkway and U.S. 1 would operate at LOS F.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Port St. Lucie Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The Design (2037) year AM peak-hour arterial analysis indicates that the Port St. Lucie Boulevard between Bayshore Boulevard and U.S. 1 would operate at LOS D or better. Finally, the PM peak-hour arterial analysis for Port St. Lucie Boulevard indicates that the segments between Bayshore Boulevard and Airoso Boulevard would operate at LOS F. However, the PM peak-hour arterial analysis also indicates that Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 would operate at LOS C.

As discussed in Section 3.2.4.1 (No Build Alternative Impacts), both Bayshore Boulevard intersections with Prima Vista Boulevard and Port St. Lucie Boulevard experience capacity deficiencies that could be addressed by localized intersection improvements. However, localized intersection upgrades at these two locations would not improve the capacity deficiencies on Prima Vista Boulevard and Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 in the No Build Alternative.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that U.S. 1 intersections located north and south of the Alternative 2D and U.S. 1/Walton Road intersection would operate at LOS D or better. The AM and PM peak-hour arterial analysis for U.S. 1 indicates that the entire roadway between Prima Vista Boulevard and Port St. Lucie Boulevard would operate at LOS D or better.

The Design (2037) year system performance measure base on CORSIM for Alternative 2D indicates 27.63 mph average speed and 0.95 min/mi of delay in the AM peak hour and 24.10 mph and 1.28 min/mi in the PM peak hour. The AM and PM peak-hour system-wide average speed improved by 16.9 percent and 30.4 percent, respectively, as compared to the No Build Alternative. The AM and PM peak-hour system-wide delay decreased by 25.8 percent and 36.0 percent, respectively, as compared to the No Build Alternative.

3.2.4.2.3.2 Social and Economic Impacts (2D)

Alternative 2D would have the second highest number of occupied residential relocations (137) compared to all build alternatives. If the number of previously purchased developed properties is included (33), a total of 170 residential relocations would be affected by this alternative. Alternative 2D would have substantial local community cohesion and mobility impacts by partially isolating the neighborhood east of Floresta Drive between West Virginia Drive and Walters Terrace. This would also create a local safety concern for this neighborhood.

Alternative 2D is similar to Alternative 2A in its effects to households. Of the 137 occupied residential properties to be acquired, it is estimated based on the census data, that 35 minority households (25.55 percent of the total), 32 disabled households (23.36 percent of the total), and 22 elderly households (16.06 percent of the total) would need to be relocated. No businesses would be displaced. No community facilities (non-Section 4(f) resources) would be affected. However, it would have an indirect effect on Floresta Elementary School. This alternative would require the closure of Bywood Avenue to/from Floresta Drive, requiring an adjustment of access to/from the school (same as Alternative 2A). Alternative 2D would remove 0.10 percent of the City's tax base and 0.06 percent of the County's tax base.

3.2.4.2.3.3 Natural and Physical Resource Impacts (2D)

Alternative 2D has 179 residential units represented by 164 noise sensitive receptors. Of these, 39 receptors would be impacted by noise greater than the Noise Abatement Criteria if no noise barrier is used (impacted receptors). The noise barrier analysis revealed that 24 of the 39 impacted receptors could be benefited by a noise wall and 15 receptors could not be benefited by a noise wall.

It would have the lowest direct impact (7.64 acres) on wetlands (7.44 functional loss units, which includes direct and indirect impacts) and the most impact on uplands (7.51 total acres). These impacts are the same as Alternative 2A. It would have the third highest total impact on essential fish habitat (9.90 acres), which includes 7.64 acres of palustrine and mangrove habitats (same as wetlands) and 2.26 acres of open water habitat (primarily shading). These impacts are the same as Alternative 2A.

For purposes of Section 4(f), no bridging option appears to be feasible that would avoid the use of the AP. Thus, it would use lands from the AP (0.02 acres) and the SPSP (5.33 acres), the same as Alternative 2A. It is the only alternative that would use lands from Kiwanis Park (1.06 acres).

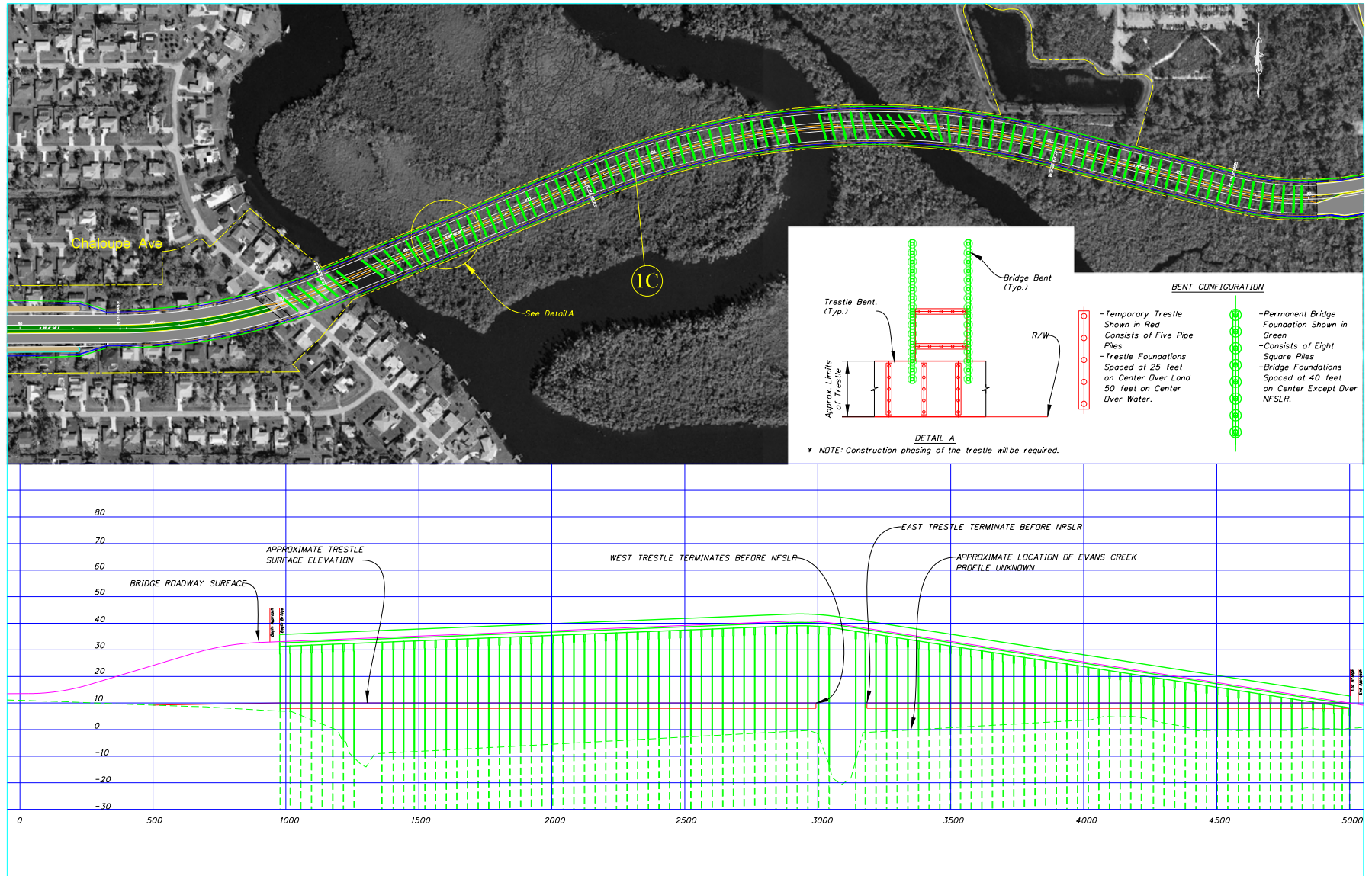
3.2.4.2.4 Alternative 1C

Figure 3.43 depicts the alignment of Alternative 1C and **Figure 3.44** depicts the proposed bridge crossing in a plan and profile view as analyzed in this document.

3.2.4.2.4.1 Traffic Considerations (1C)

As shown in **Figure 3.43**, Alternative 1C would connect Crosstown Parkway along West Virginia Drive west of the NFSLR to the existing intersection of U.S. 1 and Village Green Drive. The proposed Crosstown Parkway connection would create the fourth leg (west leg) at this existing intersection. This alternative would require signalization of the existing West Virginia Drive and Floresta Drive 2-way stop control intersection. **Figure 3.45** shows Alternative 1C intersection geometry.

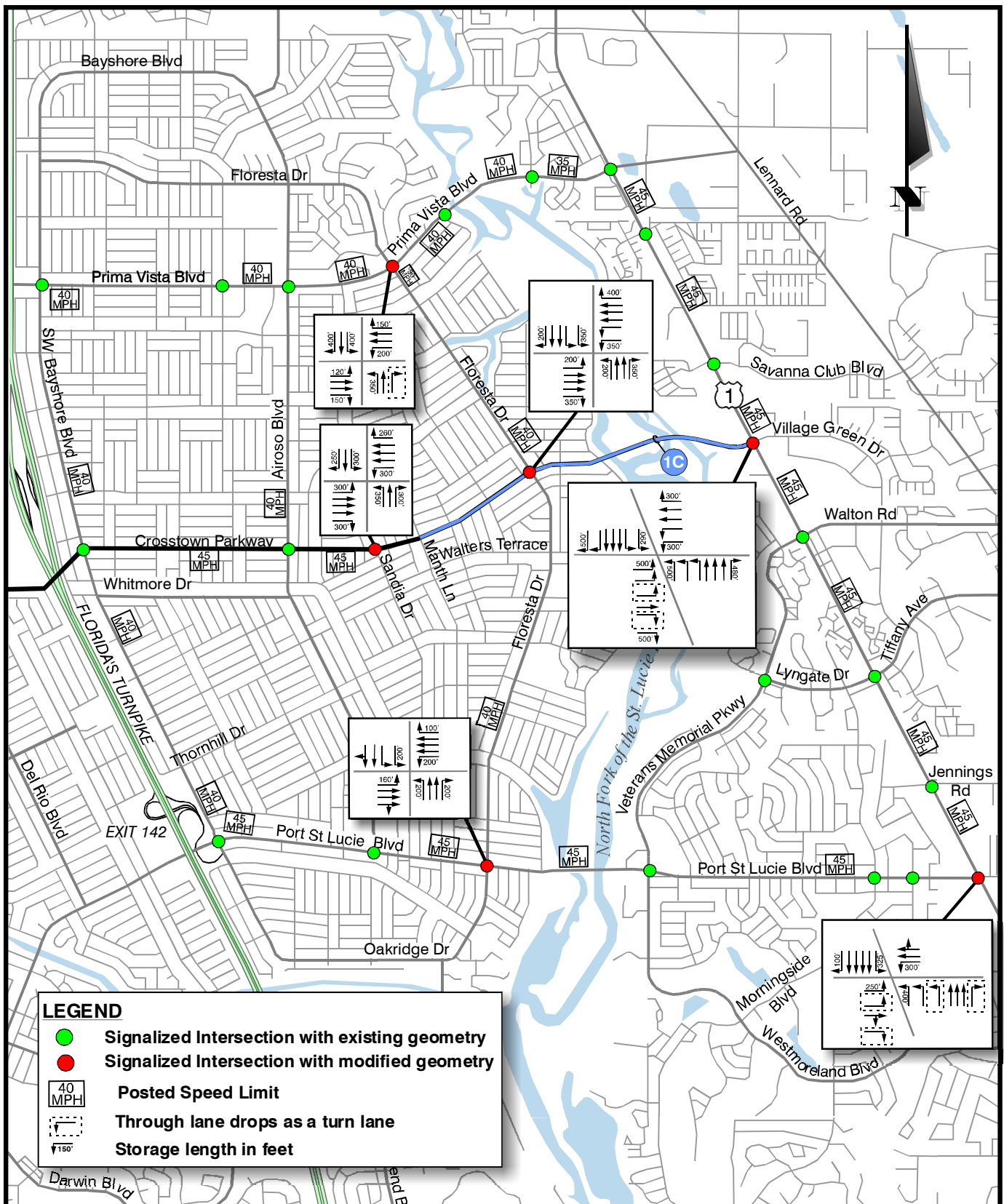
Because Alternative 1C would connect to an existing U.S. 1 intersection, a variance to the FDOT Access Management standards (Chapter 14-97 FAC) is not required. The standards require signal spacing along U.S. 1 of no less than one-half mile (2,640 feet).



(Alternative 1C)

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 Bridge Plan and Profile Alternative 1C
 Figure 3.44



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 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
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 Alternative 1C Geometry
 Figure 3.45**

The AADT forecasts for the Opening (2017) and Design (2037) years for Prima Vista Boulevard, Alternative 1C, Port St. Lucie Boulevard, and U.S. 1 are graphically shown in **Figures 3.46** and **3.47**, respectively. The AADT forecast for the Interim (2027) year was developed by linear interpolation between 2017 and 2037 AADT. As shown in **Table 3.19**, the east-west system daily capacity across the NFSLR would increase to 142,700 vehicles, and the combined AADT would be 155,600 in the Design (2037) year. The No Build Alternative would have a system daily capacity of 89,200 vehicles and a combined AADT of 138,000.

Table 3.19 Alternative 1C AADT Crossing the NFSLR

Location	AADT Crossing the NFSLR		
	Opening (2017)	Interim (2027)	Design (2037)
Prima Vista Boulevard	16,500	19,800	23,000
Crosstown Parkway	47,000	54,700	62,300
Port St. Lucie Boulevard	58,700	64,900	71,000
Total AADT (V = volume)	122,200	139,400	156,300
Total Capacity (C) ¹	142,700	142,700	142,700
Total V/C	0.86	0.98	1.10
Total AADT Exceeding Capacity (Three Bridges Combined)	n/a	n/a	13,600

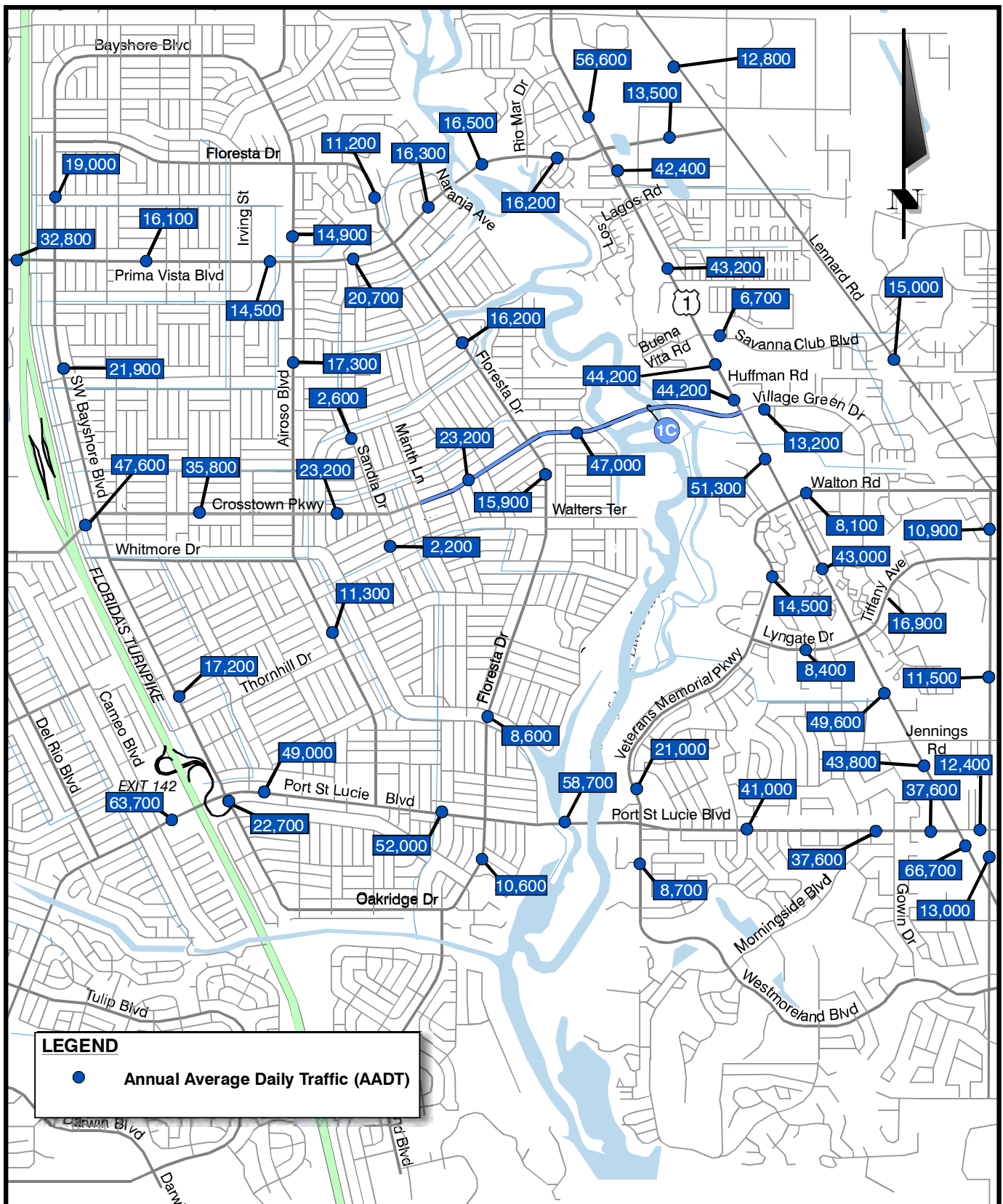
¹ Combined capacity of all three NFSLR crossings.

The AADT for the two existing bridges, as compared to the No Build Alternative, suggests a traffic diversion of 52 percent from Prima Vista Boulevard and 21 percent from Port St. Lucie Boulevard Alternative 1C extension in the Design (2037) year.

The intersection and arterial operations analyses were performed for Prima Vista Boulevard, Port St. Lucie Boulevard, and U.S. 1 for the Opening (2017) and Design (2037) years for Alternative 1C. The detailed intersection and arterial analysis is presented in the DTTM. **Figures 3.48** and **3.49** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Opening (2017) year. **Figures 3.50** and **3.51** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Design (2037) year.

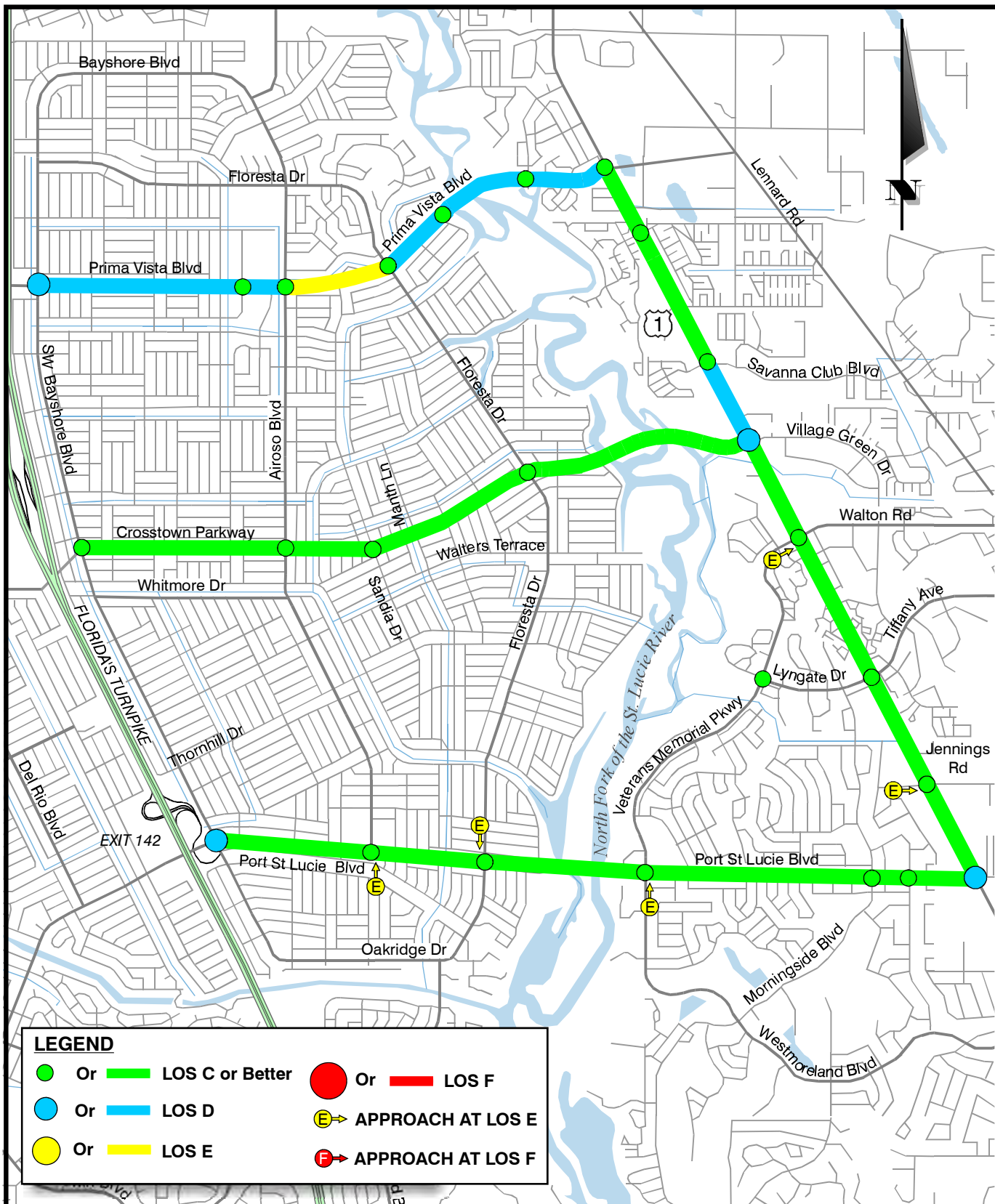
The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Prima Vista Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM peak-hour arterial analysis for Prima Vista Boulevard indicates that the segment between Airoso Boulevard and Floresta Drive would operate at LOS E. The remaining Prima Vista Boulevard arterial in the study area would operate at LOS D during the AM peak hour. Finally, the PM peak-hour arterial analysis for Prima Vista Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS E, but the segment between Airoso Boulevard and U.S. 1 would operate at LOS D or better.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Alternative 1C intersections would operate at LOS D or better. Also, the Design (2037) year AM and PM peak-hour arterial analysis for Alternative 1C indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS C.



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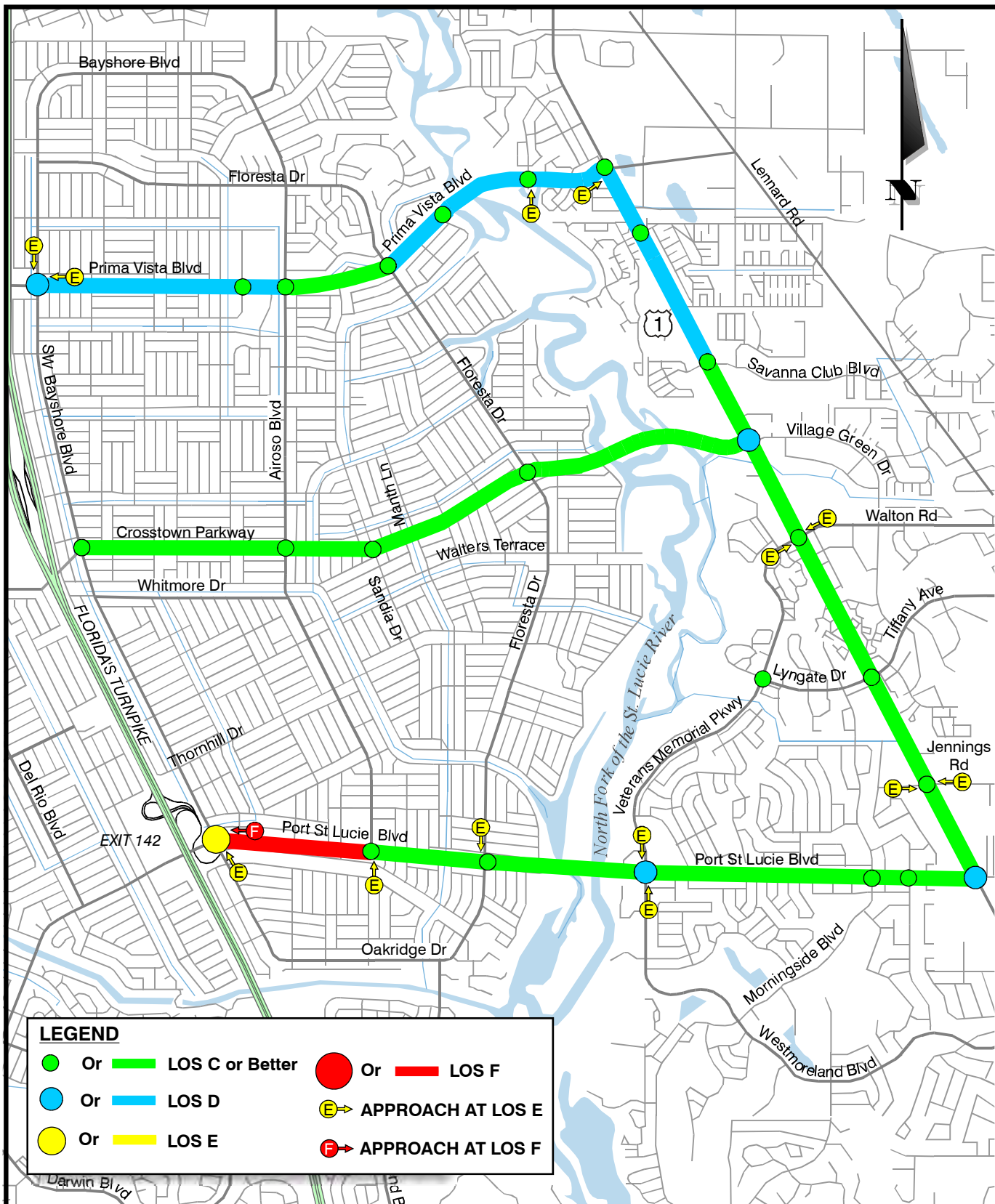
Crosstown Parkway Extension PD&E Study and
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 Alternative 1C Opening Year (2017) AADT
 Figure 3.46



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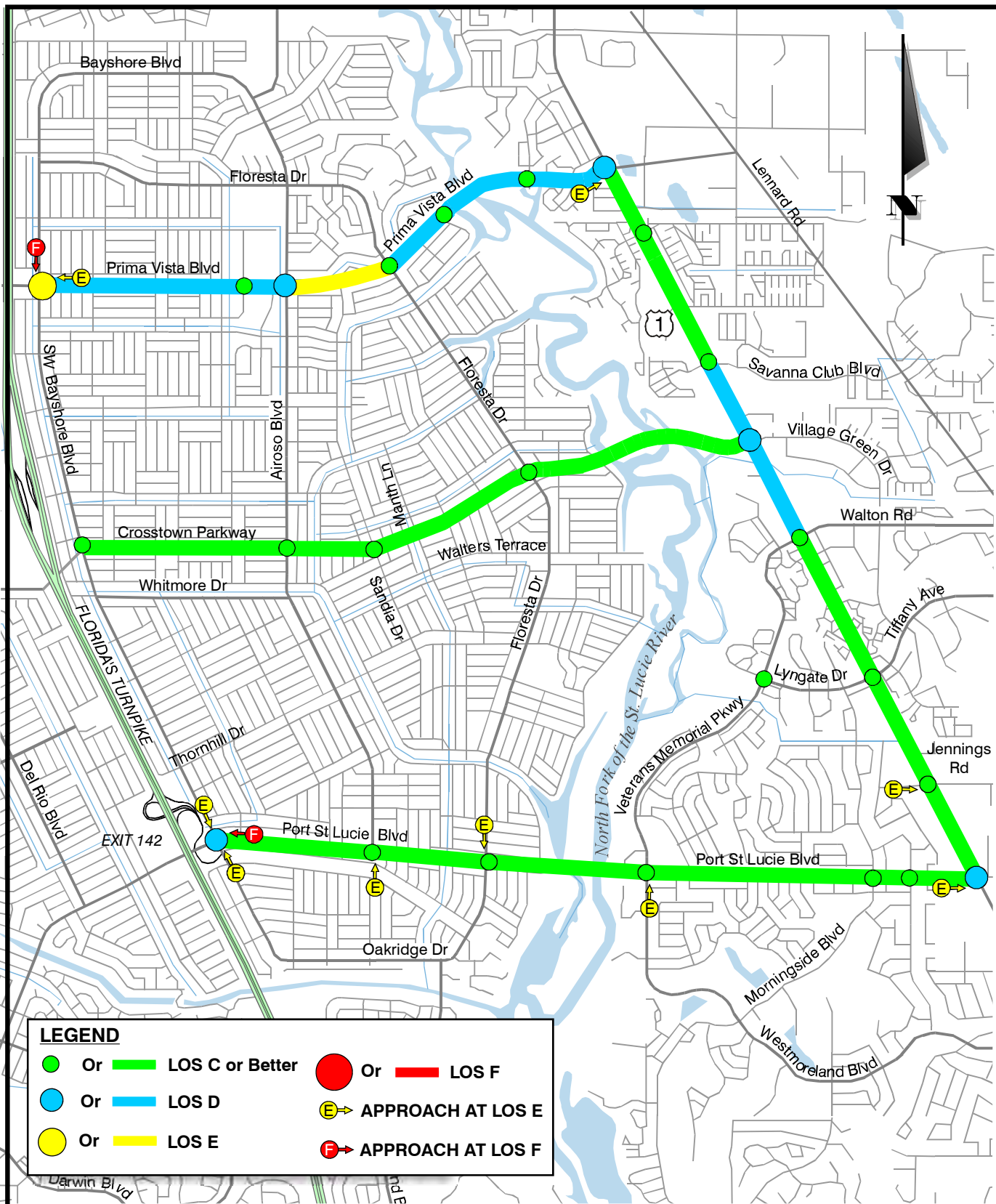
**Crosstown Parkway Extension PD&E Study and
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 2017 AM Peak Hour Level of Service-Alternative 1C**

Figure 3.48



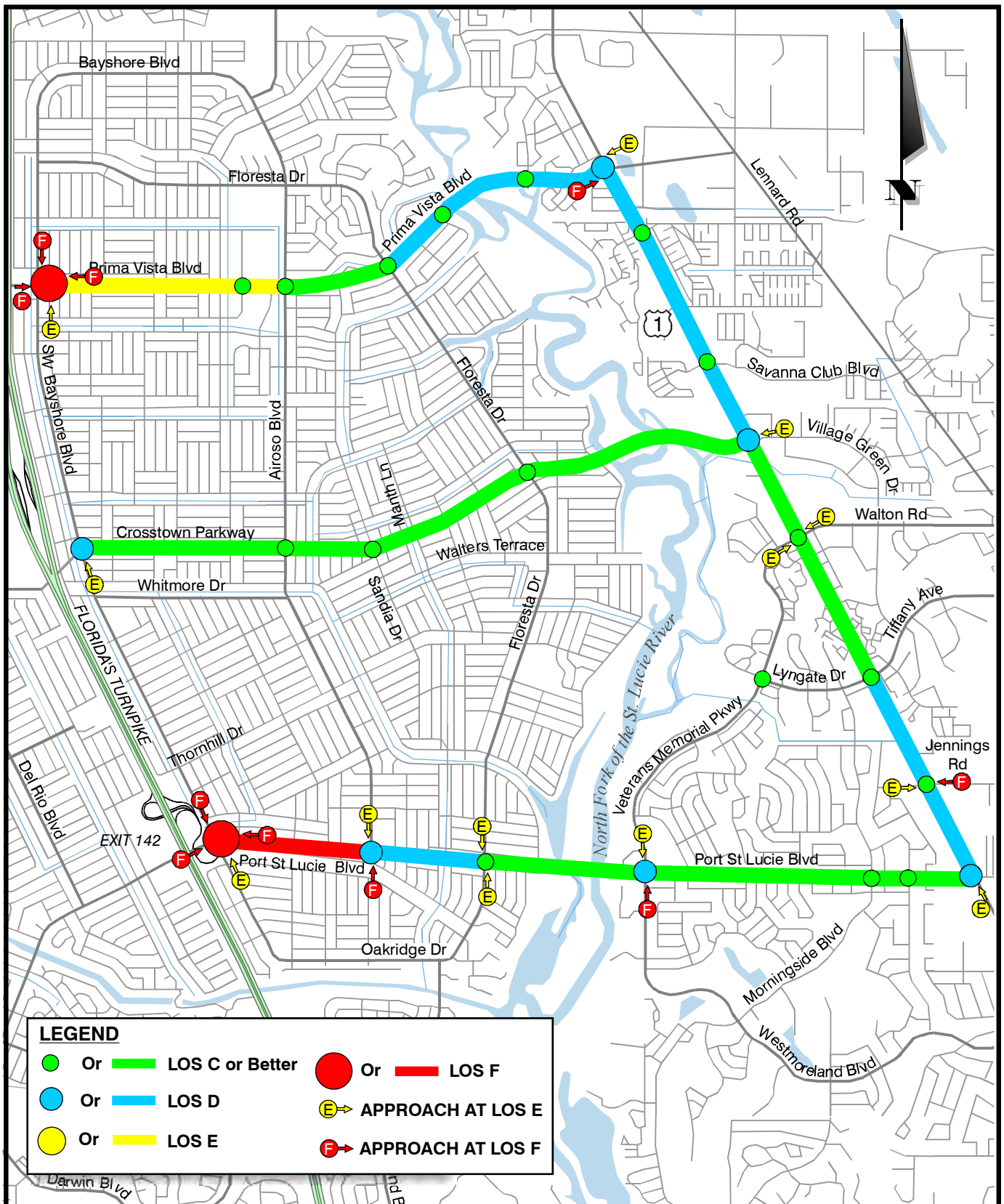
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 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
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 2017 PM Peak Hour Level of Service-Alternative 1C
 Figure 3.49



FM No. 410844-1-28-01
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**Crosstown Parkway Extension PD&E Study and
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 2037 AM Peak Hour Level of Service-Alternative 1C
 Figure 3.50



FM No. 410844-1-28-01
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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 PM Peak Hour Level of Service-Alternative 1C
 Figure 3.51

The Design (2037) year AM and PM peak-hour intersection analysis for Alternative 1C indicates that the Port St. Lucie Boulevard intersection with Bayshore Boulevard would operate at LOS D and F, respectively. The Design (2037) year AM peak-hour arterial analysis indicates that Port St. Lucie Boulevard between Bayshore Boulevard and U.S. 1 would operate at LOS C. Finally, the PM peak-hour arterial analysis for Port St. Lucie Boulevard indicates that the segments between Bayshore Boulevard and Airoso Boulevard would operate at LOS F. However, the PM peak-hour arterial analysis also indicates that Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 would operate at LOS D or better.

As discussed in Section 3.2.4.1 (No Build Alternative Impacts), both Bayshore Boulevard intersections with Prima Vista Boulevard and Port St. Lucie Boulevard experience capacity deficiencies that could be addressed by localized intersection improvements. However, localized intersection upgrades at these two locations would not improve the capacity deficiencies on Prima Vista Boulevard and Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 in the No Build Alternative.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that U.S. 1 intersections located north and south of the Alternative 1C and U.S. 1/Village Green Drive intersections would operate at LOS D or better. The AM and PM peak-hour arterial analysis for U.S. 1 indicates that the entire roadway between Prima Vista Boulevard and Port St. Lucie Boulevard would operate at LOS D or better.

The Design (2037) year system performance measure base on CORSIM for Alternative 1C indicates 29.03 mph average speed and 0.86 min/mi of delay in the AM peak hour and 24.53 mph and 1.22 min/mi in the PM peak hour. The AM and PM peak-hour system-wide average speed improved by 22.8 percent and 32.7 percent, respectively, as compared to the No Build Alternative. The AM and PM peak-hour system-wide delay decreased by 32.8 percent and 39.0 percent, respectively, as compared to the No Build Alternative.

3.2.4.2.4.2 Social and Economic Impacts (1C)

Alternative 1C would have the fewest number of occupied residential relocations (65) compared to all build alternatives. If the number of previously purchased developed properties is included (35), a total of 100 residential relocations would be affected by this alternative. Alternative 1C would have fewer adverse social or economic impacts (compared to the rest of the build alternatives) because it would be aligned along the existing West Virginia Drive on the west side of the NFSLR and would not pass through or near any residential or commercial areas on the east side of the NFSLR. Because of this alignment, it would result in fewer relocations (compared with the other build alternatives). Of the 65 occupied residential properties to be acquired, it is estimated, based on the census data, that 21 minority households (32.31 percent of the total), 17 disabled households (26.15 percent of the total), and 10 elderly households (15.38 percent of the total) would need to be relocated. No businesses would be displaced. No community facilities (non-Section 4(f) resources) would be directly or indirectly affected. Alternative 1C would remove approximately 0.04 percent of the City's tax base and 0.02 percent of the County's tax base.

3.2.4.2.4.3 Natural and Physical Resource Impacts (1C)

Alternative 1C has 99 residential units, all represented as noise sensitive receptors. Of these, ten receptors would be impacted by noise greater than the Noise Abatement Criteria if no noise barrier is used (impacted receptors). The noise barrier analysis revealed that all of the ten impacted receptors could be benefited by a noise barrier.

This alternative would have the most direct impact (10.10 acres) on wetlands (11.0 functional loss units, which includes direct and indirect impacts) and the second lowest upland impacts (3.95 total acres) compared to the other build alternatives. It would have the highest impact on essential fish habitat (11.85 acres), which includes 10.10 acres of palustrine and mangrove habitat (same as wetlands) and 1.75 acres of open water habitat (primarily shading).

For purposes of Section 4(f), Alternative 1C would use the AP (0.02 acres). It would also use lands from the SPSP (2.21 acres). It would not use lands from Kiwanis Park. This is the only alternative that would affect Halpatickee Canoe and Nature Trail, which is the only land-based access to the AP (motorized boat access would remain unaffected). Halpatickee Canoe and Nature Trail is the only land-based public access to the portion of the SPSP west of U.S. 1 (this alternative would have no effect on the portion of the State park east of U.S. 1). Under the Proprietary Mitigation Plan Halpatickee will be relocated 1,000 feet to the south and will provide an improved facility with a direct connection to Evans Creek.

Following the selection of Alternative 1C as the Preferred Alternative, additional avoidance and minimization measures were developed through coordination with the cooperating and participating agencies. This reduced unavoidable impacts of the Preferred Alternative to wetlands, listed species habitats, Section 4(f) use, and essential fish habitat and is described in Section 7.1.1 (Additional Avoidance and Minimization Measures for the Preferred Alternative).

3.2.4.2.5 Alternative 1F

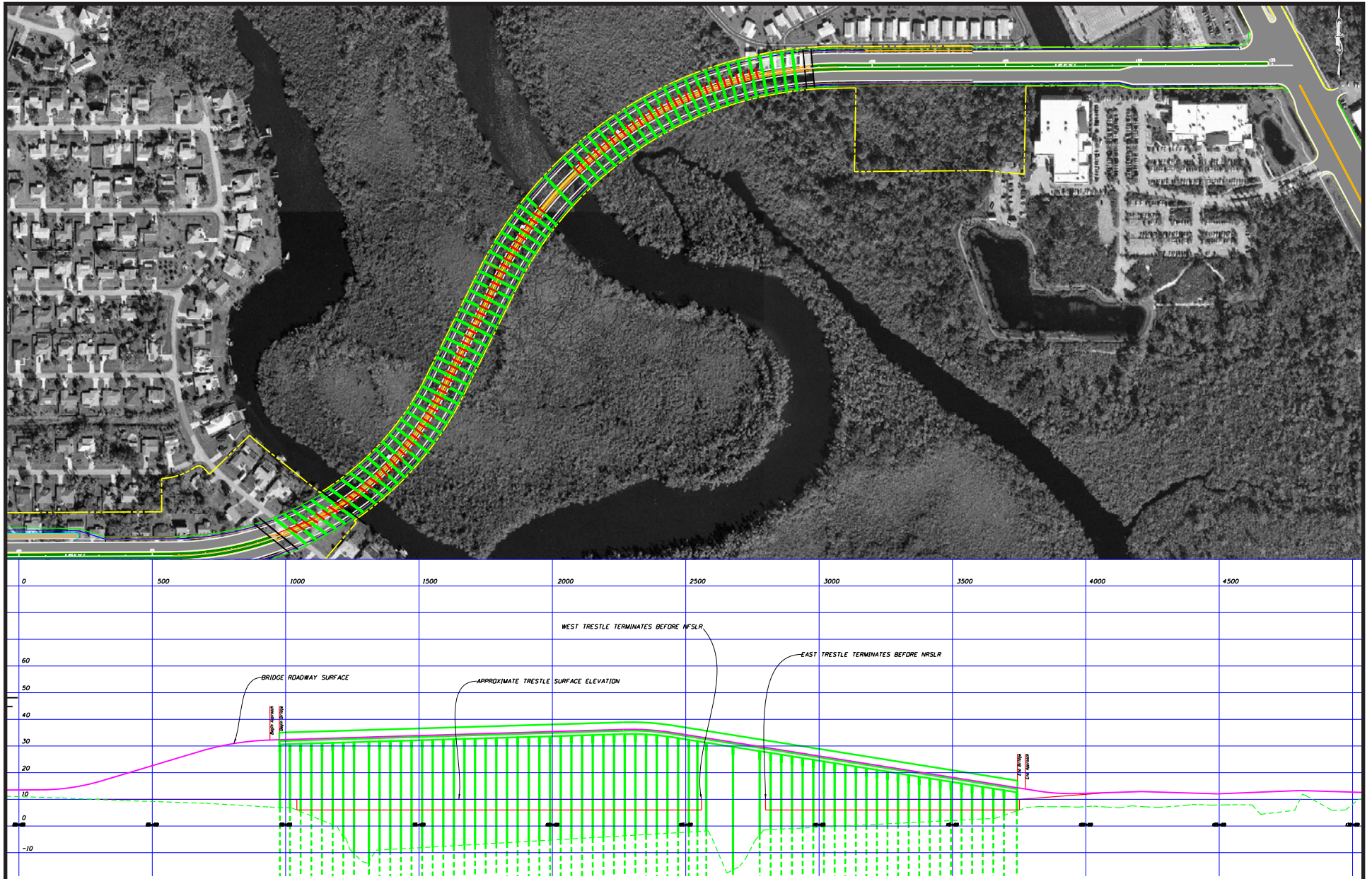
Figure 3.52 depicts the alignment of Alternative 1F and **Figure 3.53** depicts the proposed bridge crossing in a plan and profile view as analyzed in this document.

3.2.4.2.5.1 Traffic Considerations (1F)

As shown in **Figure 3.52**, Alternative 1F would extend Crosstown Parkway along West Virginia Drive, then curve northeast across the NFSLR, bending eastward long the southern boundary of La Buona Vita, and connect with U.S. 1 at a new 3-leg intersection between Village Green Drive and Savanna Club Boulevard. This alternative would require signalization of the existing West Virginia Drive and Floresta Drive two-way stop control intersection. **Figure 3.54** shows Alternative 1F intersection geometry.

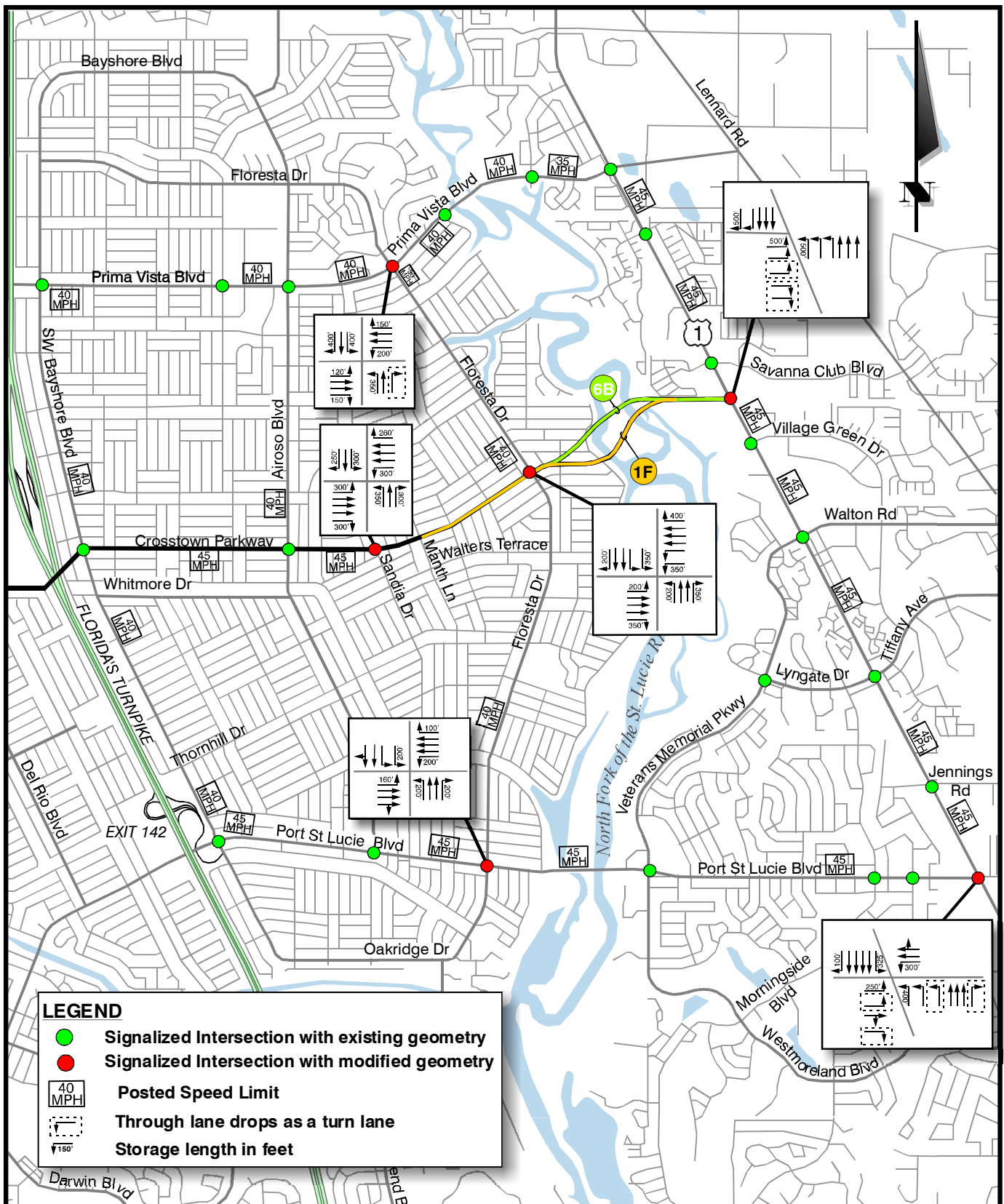
The new intersection of Alternative 1F at U.S. 1 would be located 1,240 feet south of the existing Savanna Club Boulevard signalized intersection and 1,355 feet north of the existing Village Green Drive signalized intersection. This location would require a variance to the FDOT Access Management standards (Chapter 14-97 FAC) that require signal spacing along U.S. 1 of no less than ½-mile (2,640 feet).

The AADT forecasts for the Opening (2017) and Design (2037) years for Prima Vista Boulevard, Alternative 1F, Port St. Lucie Boulevard, and U.S. 1 are graphically shown in **Figures 3.55** and **3.56**, respectively. The AADT forecast for the Interim (2027) year was developed by linear interpolation between 2017 and 2037 AADT.



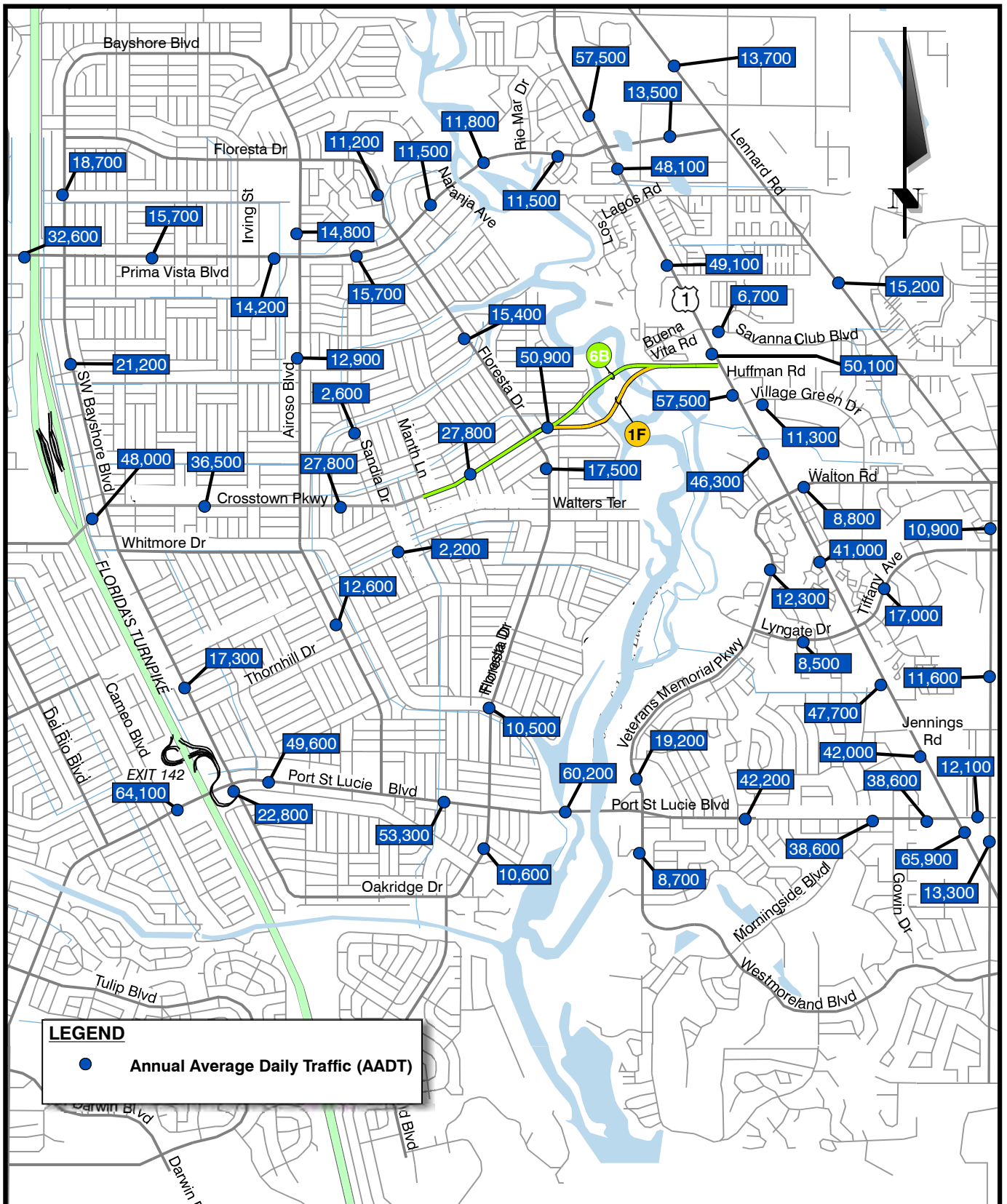
FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
Bridge Plan and Profile Alternative 1F
 Figure 3.53



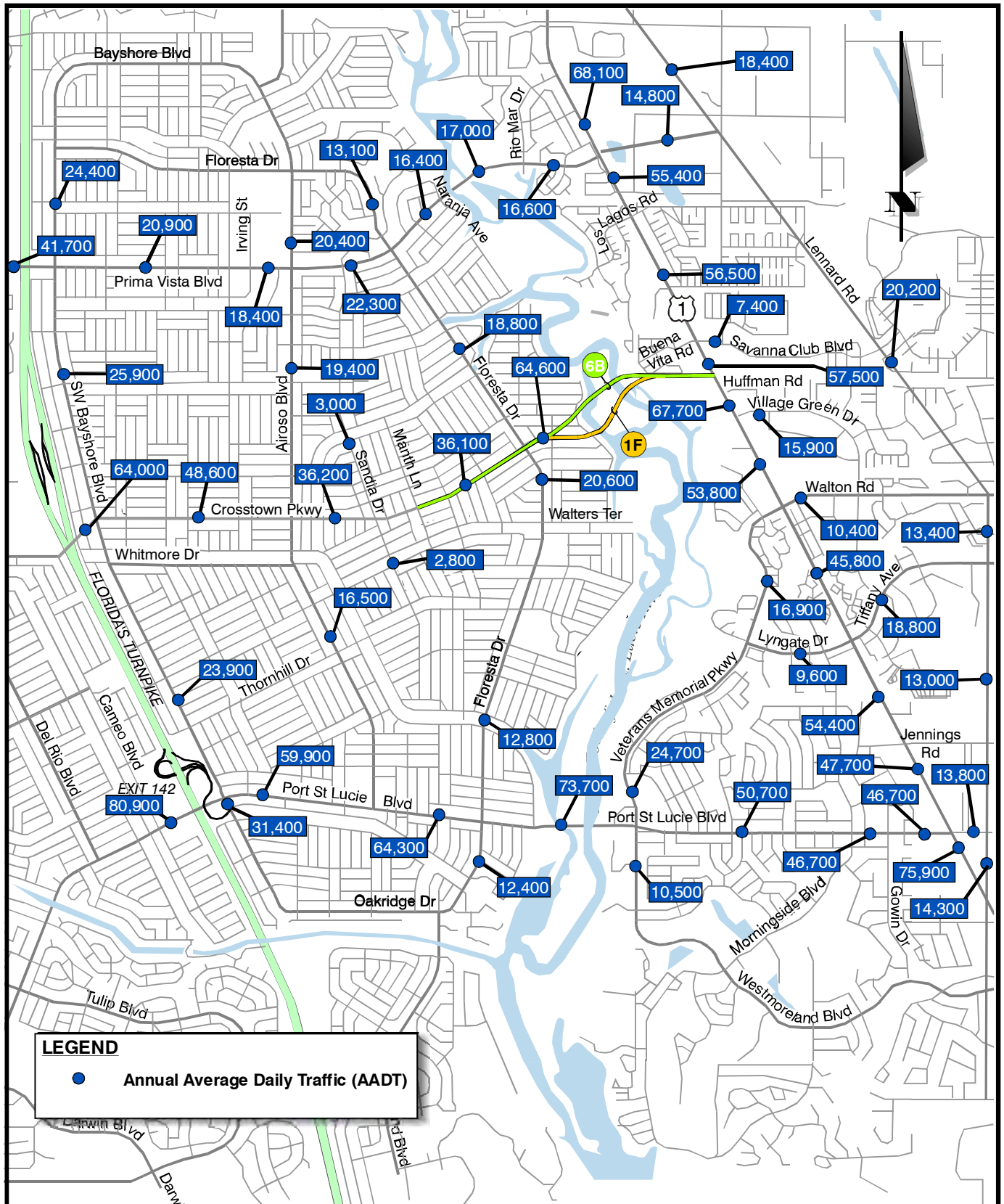
FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
Alternative 1F/6B Geometry
 Figure 3.54



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Alternative 1F/6B Opening Year (2017) AADT
 Figure 3.55



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Alternative 1F/6B Design Year (2037) AADT
 Figure 3.56

As shown in **Table 3.20**, the east-west system daily capacity across the NFSLR would increase to 142,700 vehicles, and the combined AADT would be 155,300 in the Design (2037) year. The No Build Alternative would have a system daily capacity of 89,200 vehicles and a combined AADT of 138,000.

Table 3.20 Alternative 1F/6B AADT Crossing the NFSLR

Location	AADT Crossing the NFSLR		
	Opening (2017)	Interim (2027)	Design (2037)
Prima Vista Boulevard	11,800	14,400	17,000
Crosstown Parkway	50,900	57,800	64,600
Port St. Lucie Boulevard	60,200	67,000	73,700
Total AADT (V = volume)	122,900	139,200	155,300
Total Capacity (C) ¹	142,700	142,700	142,700
Total V/C	0.86	0.98	1.09
Total AADT Exceeding Capacity (Three Bridges Combined)	n/a	n/a	12,600

¹ Combined capacity of all three NFSLR crossings.

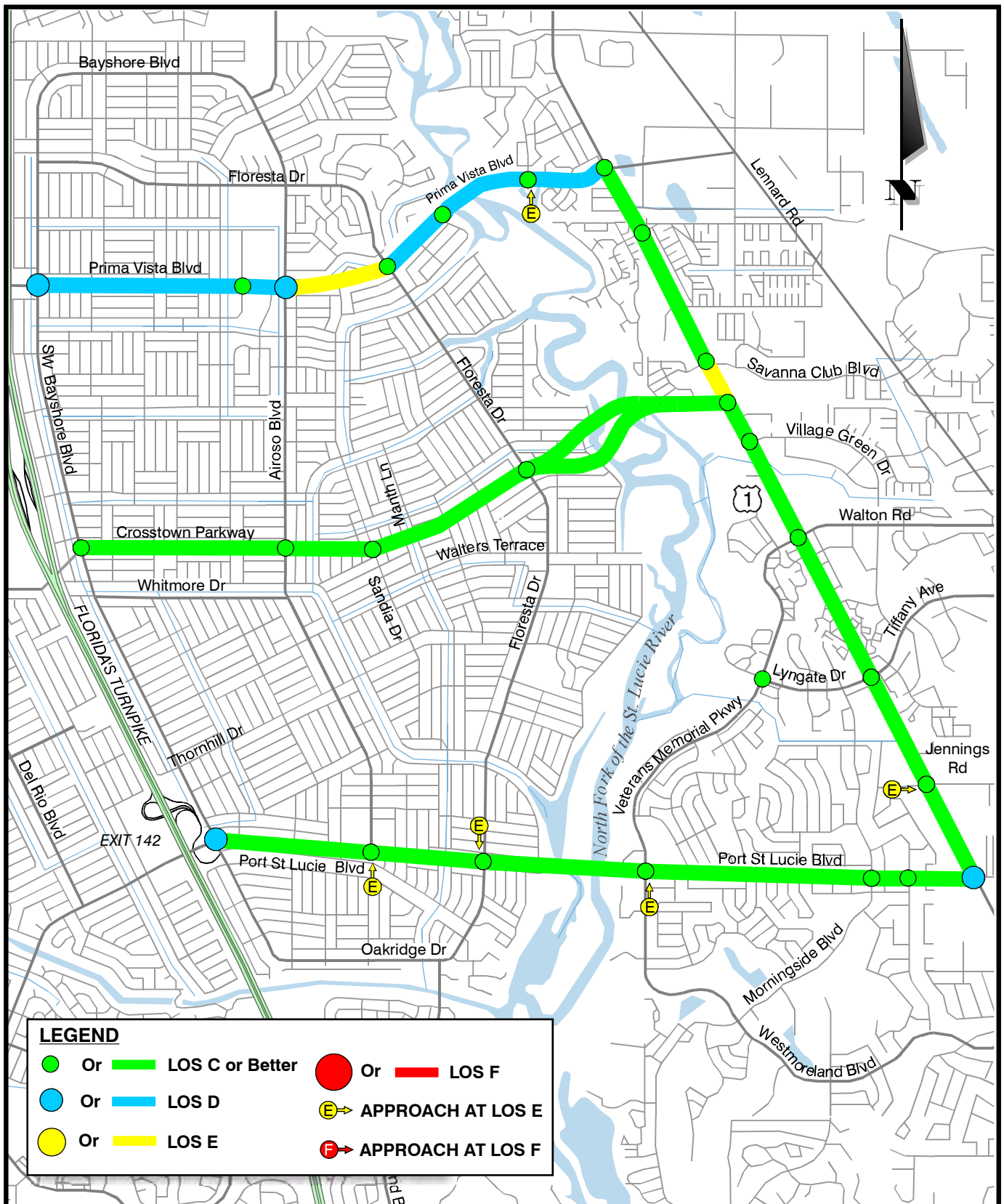
The AADT for the two existing bridges, as compared to the No Build Alternative, suggests a traffic diversion of 65 percent from Prima Vista Boulevard and 18 percent from Port St. Lucie Boulevard to Alternative 1F in the Design (2037) year.

The intersection and arterial operations analyses were performed for Prima Vista Boulevard, Port St. Lucie Boulevard and U.S. 1, for the Opening (2017) and Design (2037) years for Alternative 1F. The detailed intersection and arterial analyses are presented in the DTTM. **Figures 3.57** and **3.58** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Opening (2017) year. **Figures 3.59** and **3.60** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Design (2037) year.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Prima Vista Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM and PM peak-hour arterial analysis for Prima Vista Boulevard indicate that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS D.

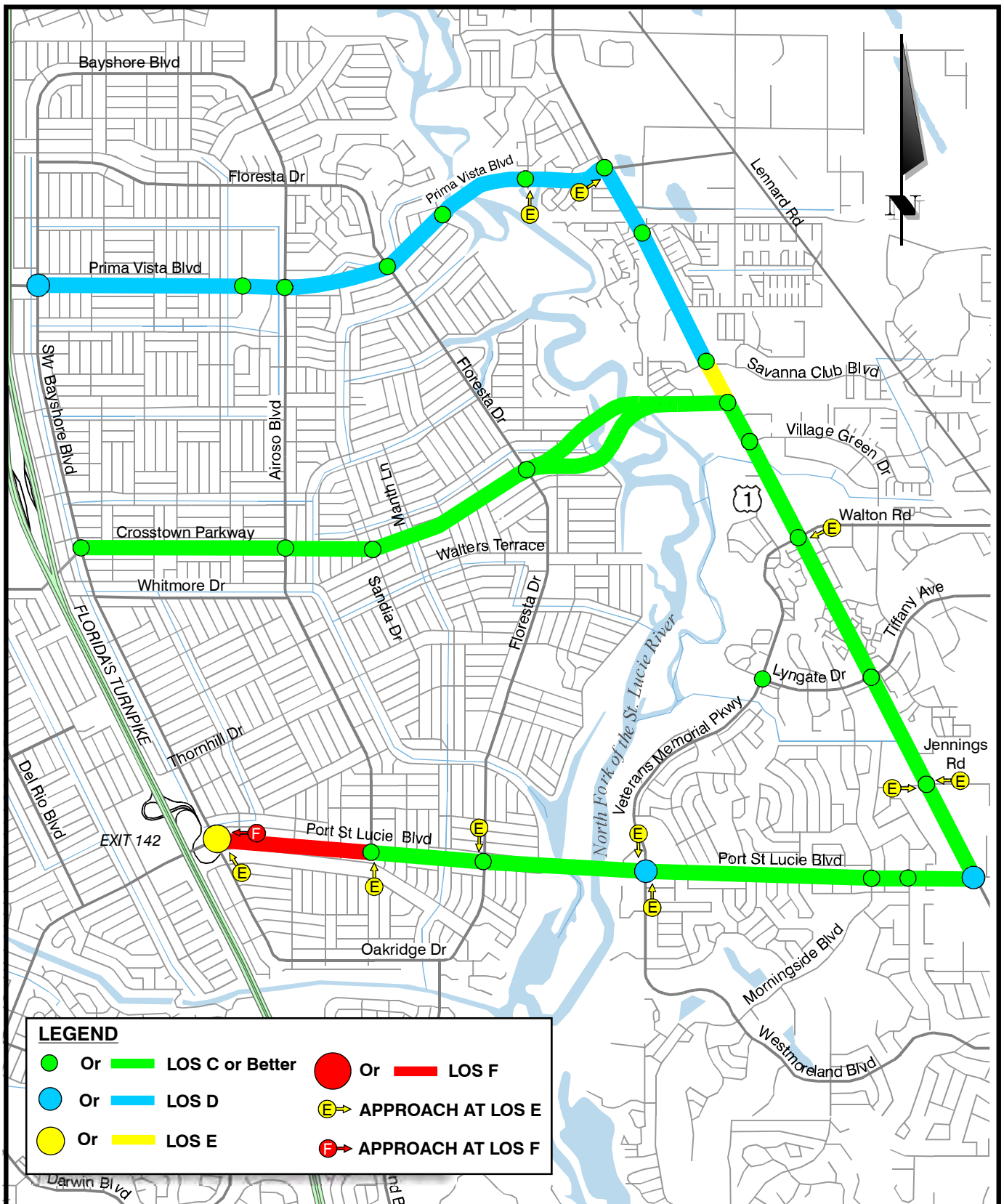
The Design (2037) year AM and PM peak-hour intersection analysis indicates that Alternative 1F intersections would operate at LOS D or better. Also, the Design (2037) year AM and PM peak-hour arterial analysis for Alternative 1F indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS C.

The Design (2037) year AM peak-hour arterial analysis indicates that Port St. Lucie Boulevard between Bayshore Boulevard and U.S. 1 would operate at LOS C. The PM peak-hour arterial analysis for Port St. Lucie Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS F; the segment between Airoso Boulevard and Floresta Drive would operate at LOS E; and the segment between Floresta Drive and U.S. 1 would operate at LOS C or better.



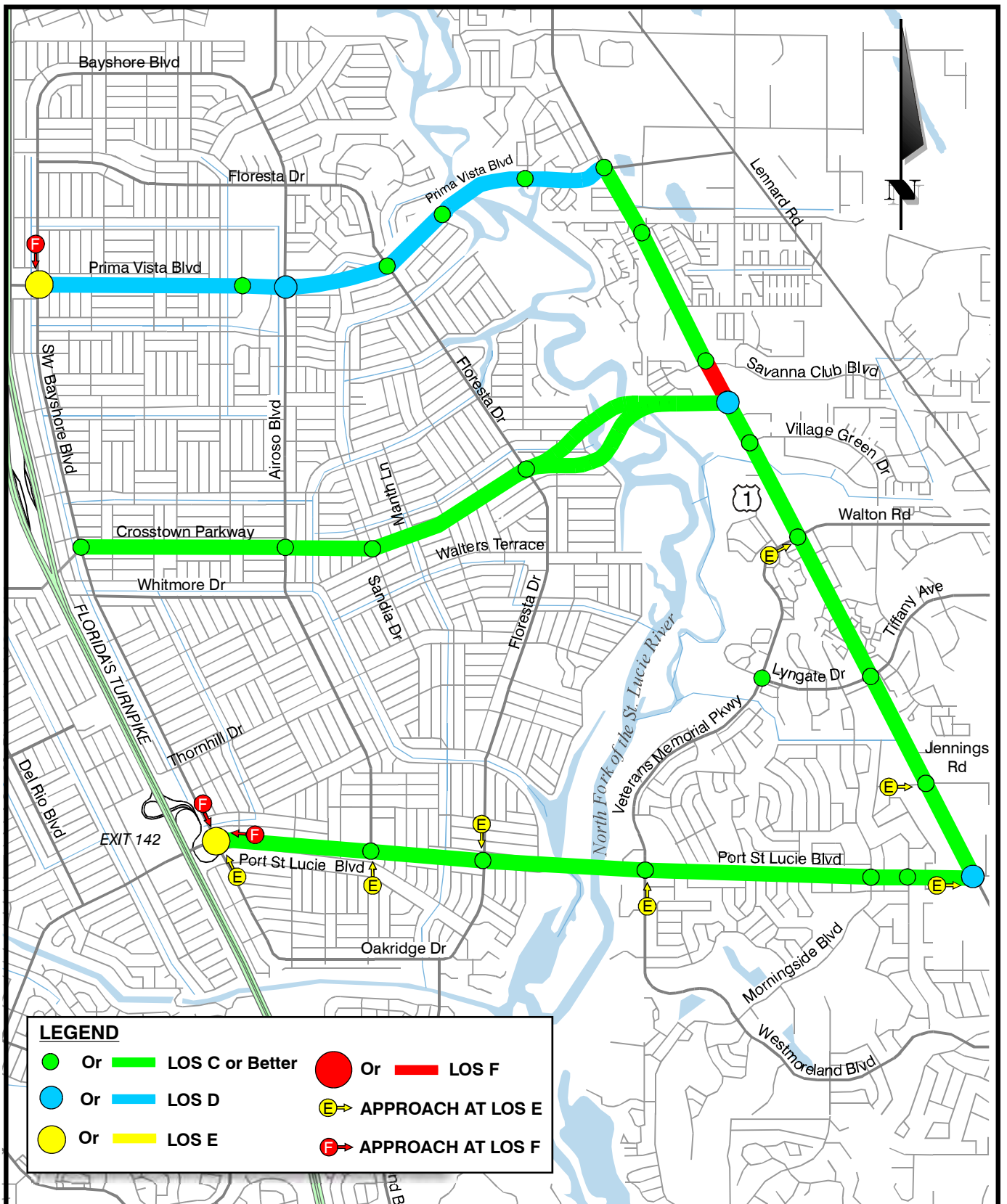
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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 AM Peak Hour Level of Service-Alternative 1F/6B
Figure 3.57



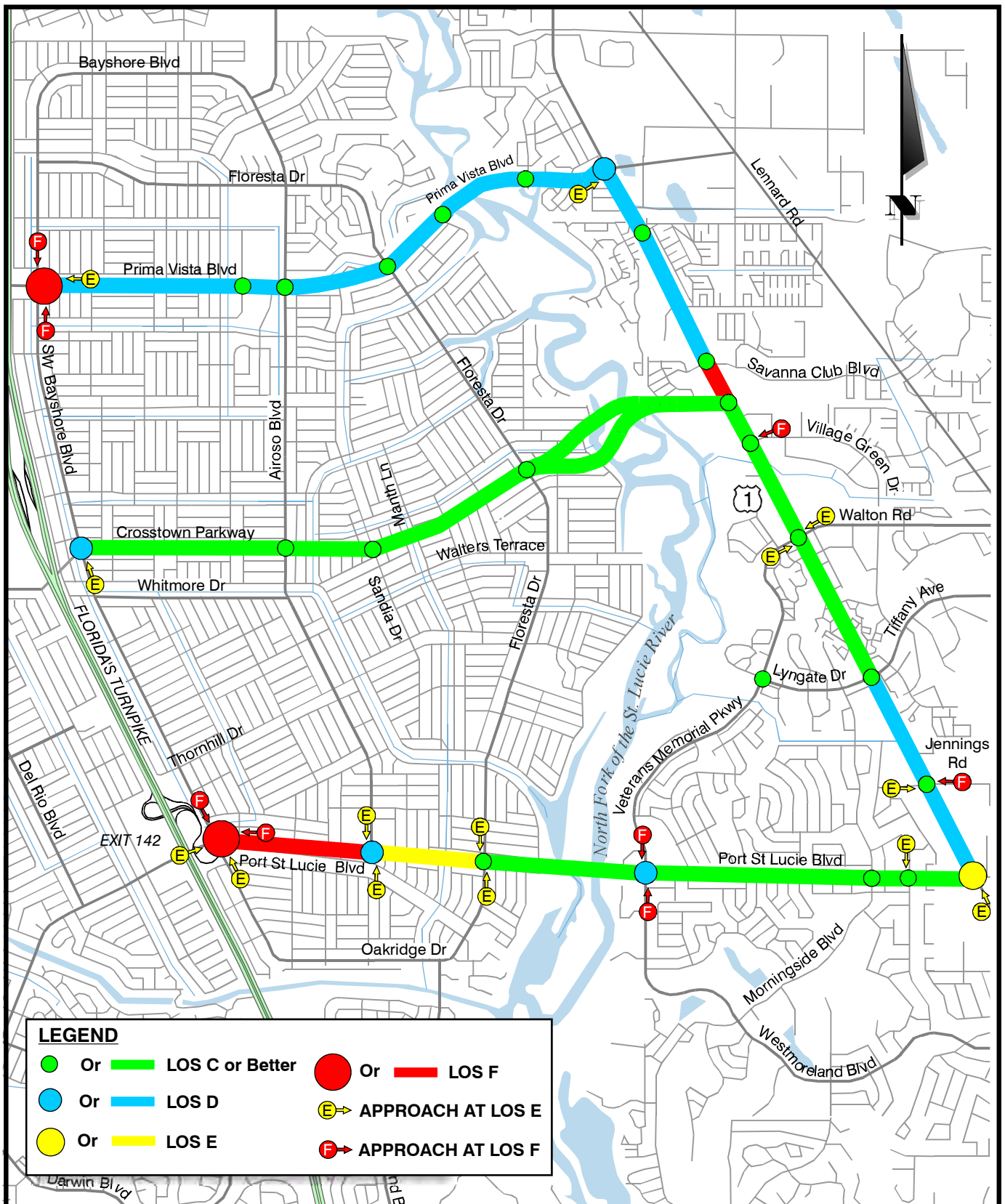
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**Crosstown Parkway Extension PD&E Study and
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 2017 PM Peak Hour Level of Service-Alternative 1F/6B
Figure 3.58



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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 AM Peak Hour Level of Service-Alternative 1F/6B
Figure 3.59



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 PM Peak Hour Level of Service-Alternative 1F/6B
Figure 3.60

As discussed in Section 3.2.4.1 (No Build Alternative Impacts), both Bayshore Boulevard intersections with Prima Vista Boulevard and Port St. Lucie Boulevard experience capacity deficiencies that could be addressed by localized intersection improvements. However, localized intersection upgrades at these two locations would not improve the capacity deficiencies on Prima Vista Boulevard and Port St. Lucie Boulevard between Airoso Boulevard, and U.S. 1 in the No Build Alternative.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that, except for Port St. Lucie Boulevard and U.S. 1 intersection, all other intersections along U.S. 1 would operate at LOS D or better. The AM and PM peak-hour arterial analysis for U.S. 1 indicates that except for the segment between Savanna Club Boulevard and Alternative 1F, the remainder of the roadway between Prima Vista Boulevard and Port St. Lucie Boulevard would operate at LOS D or better. U.S. 1 between Savanna Club Boulevard and Alternative 1F would operate at LOS F for both the AM and PM peak hours. Due to the high traffic volumes for all three approaches competing for the signal green time at the Alternative 1F and U.S. 1 intersection and the short distance between the adjacent existing intersections at Savanna Club Boulevard and Village Green Drive, the traffic delays along U.S. 1 will increase.

The Design (2037) year system performance measure base on CORSIM for Alternative 1F indicates 29.00 mph average speed and 0.86 min/mi of delay in the AM peak hour and 24.79 mph and 1.20 min/mi in the PM peak hour. The AM and PM peak-hour system-wide average speed improved by 22.7 percent and 34.1 percent, respectively, as compared to the No Build Alternative. The AM and PM peak-hour system-wide delay decreased by 32.8 percent and 40.0 percent, respectively, as compared to the No Build Alternative.

3.2.4.2.5.2 Social and Economic Impacts (1F)

Alternative 1F would have the fourth highest number of occupied residential relocations (89) compared to all build alternatives. If the number of previously purchased developed properties is included (35), a total of 124 residential relocations would be affected by this alternative. Alternative 1F would have substantial social, economic, and community cohesion impacts to the La Buona Vita community east of the NFSLR. This alternative would require the relocation of up to 21 residences in La Buona Vita. Because this community is a cooperative, the relocation of residents would require costs to be shared by fewer residents, causing an economic impact to the remaining residents. It would have substantial visual and noise impacts on this community. Of the 89 occupied residential properties to be acquired, it is estimated based on census data, that 26 minority households (29.21 percent of the total), 24 disabled households (26.97 percent of the total), and 16 elderly households (17.98 percent of the total), would need to be relocated. Alternative 1F would affect elderly households to a greater degree than the other build alternatives (with the exception of Alternative 6B, which is similar to Alternative 1F) because it passes through the southern portion of La Buona Vita. Twelve businesses along the U.S. 1 corridor would be displaced. No community facilities (non-Section 4(f) resources) would be directly or indirectly affected. Alternative 1F would remove approximately 0.03 percent of the City's tax base and 0.03 percent of the County's tax base.

3.2.4.2.5.3 Natural and Physical Resource Impacts (1F)

Alternative 1F has 139 residential units represented as noise sensitive receptors. Of these, 51 receptors would be impacted by noise greater than the Noise Abatement Criteria (impacted receptors). The noise barrier analysis revealed that 40 of the 51 impacted receptors could be benefited by a noise barrier and 11 receptors could not be benefited by a noise barrier.

It would have the second highest direct impact (9.02 acres) on wetlands (8.67 functional loss units, which includes indirect impacts) and the third lowest total upland impacts (2.99 acres) compared to the other build alternatives. It would have the second highest impact on essential fish habitat (10.19 acres), which includes 9.02 acres of palustrine and mangrove habitats (same as wetlands) and 1.17 acres of open water habitat (primarily shading).

For purposes of Section 4(f), Alternative 1F would use the SPSP (4.27 acres) and the AP (0.01 acres). It would not use lands from Kiwanis Park.

3.2.4.2.6 Alternative 6B

Figure 3.61 depicts the alignment of Alternative 6B, and **Figure 3.62** depicts the proposed bridge crossing in a plan and profile view, as analyzed in this document.

3.2.4.2.6.1 Traffic Considerations (6B)

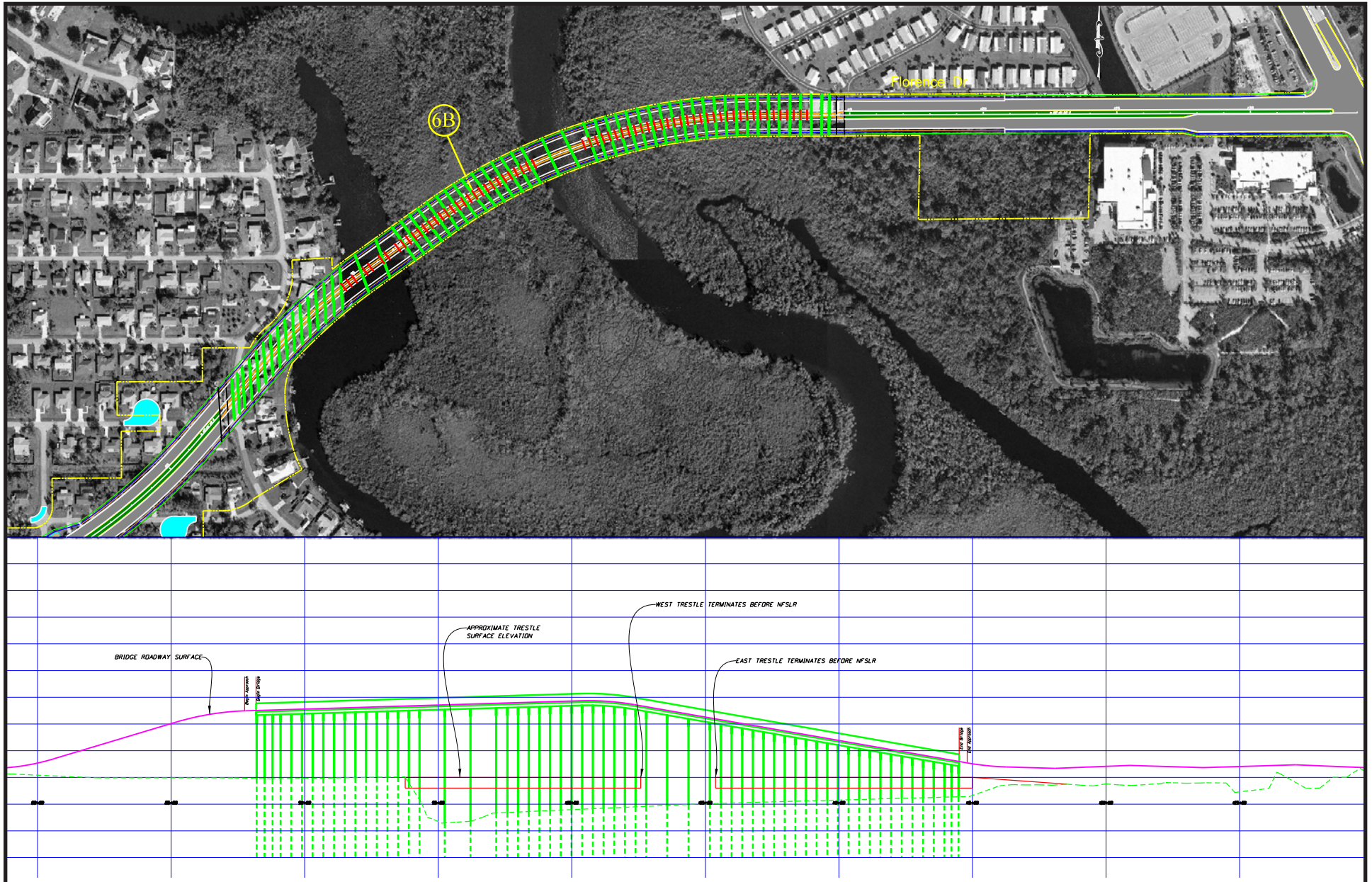
As shown in **Figure 3.61**, Alternative 6B would extend Crosstown Parkway along West Virginia Drive, then east of Floresta Drive this alternative would cut northeast through the residential area. It then would bend eastward across the NFSLR along the southern boundary of La Buona Vita, and would connect with U.S. 1 at a new 3-leg intersection between Village Green Drive and Savanna Club Boulevard (the same terminus as Alternative 1F). From a traffic perspective, this alternative is equivalent to Alternative 1F. As such, the traffic operations analysis for Alternative 6B is the same as for Alternative 1F [Section 3.2.4.2.5.1 (Traffic Considerations (1F))].

3.2.4.2.6.2 Social and Economic Impacts (6B)

Alternative 6B would have the third highest number of occupied residential relocations (100) and would traverse through an established neighborhood east of Floresta Drive. If the number of previously purchased developed properties is included (34), a total of 134 residential relocations would be affected by this alternative. From a social and economic perspective, Alternative 6B is similar to Alternative 1F. Alternative 6B would have substantial social, economic, and community cohesion impacts to the La Buona Vita east of the NFSLR. Like Alternative 1F, Alternative 6B would require the relocation of up to 21 residences in La Buona Vita.

Because this community is a cooperative, the relocation of residents would require costs to be shared by fewer residents, causing an economic impact to the remaining residents. It would have substantial visual and noise impacts on this community. Of the 100 residential properties to be acquired, it is estimated based on the census data, that 34 minority households (34.0 percent of the total), 29 disabled households (29.0 percent of the total), and 18 elderly households (18.0 percent of the total), would need to be relocated.

Alternative 6B would affect elderly households to a greater degree than the other build alternatives (with the exception of Alternative 1F, which is similar to Alternative 6B) because it passes through the southern portion of La Buona Vita. Twelve businesses would be displaced along the U.S. 1 corridor. No community facilities (non-Section 4(f) resources) would be directly or indirectly affected. Alternative 6B would remove approximately 0.05 percent of the City's tax base and 0.05 percent of the County's tax base.



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Crosstown Parkway Extension PD&E Study and
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Bridge Plan and Prolife Alternative 6B

Figure 3.62

3.2.4.2.6.3 Natural and Physical Resource Impacts (6B)

Alternative 6B has 142 residential units represented as noise sensitive receptors. Of these, 44 receptors would be impacted by noise greater than the Noise Abatement Criteria (impacted receptors). The noise barrier analysis revealed that 32 of the 44 impacted receptors could be benefited by a noise barrier and 12 receptors could not be benefited by a noise barrier.

It would have the third least direct impact (8.0 acres) on wetlands (7.37 functional loss units, which includes direct and indirect impacts) and the second lowest total upland impacts (1.80 acres) compared to the other build alternatives. It would have the second lowest impact on essential fish habitat (9.78 acres), which includes 8.0 acres of palustrine and mangrove habitats (same as wetlands) and 1.78 acres of open water habitat (primarily shading).

For purposes of Section 4(f), Alternative 6B would use the AP (0.01 acres) and lands from the SPSP (2.83 acres). It would not use lands from Kiwanis Park.

3.2.4.2.7 Alternative 6A

Figure 3.63 depicts the alignment of Alternative 6A and **Figure 3.64** depicts the proposed bridge crossing in a plan and profile view as analyzed in this document.

3.2.4.2.7.1 Traffic Considerations (6A)

As shown in **Figure 3.63**, Alternative 6A would extend Crosstown Parkway along West Virginia Drive to Floresta Drive. It then would curve northeast across a residential area and the NFSLR, then bend eastward to the existing intersection of U.S. 1 and Savanna Club Boulevard. This alternative would require signalization of the existing West Virginia Drive and Floresta Drive two-way stop control intersection. **Figure 3.65** shows Alternative 6A intersection geometry.

Alternative 6A would connect to an existing U.S. 1 intersection. A variance to the FDOT Access Management standards (Chapter 14-97 FAC) that require signal spacing along U.S. 1 of no less than ½-mile (2,640 feet) is not required.

The AADT forecasts for the Opening (2017) and Design (2037) years for Prima Vista Boulevard, Alternative 6A, Port St. Lucie Boulevard, and U.S. 1 are graphically shown in **Figures 3.66** and **3.67**, respectively. The AADT forecast for the Interim (2027) year was developed by linear interpolation between 2017 and 2037 AADT. As shown in **Table 3.21**, the east-west system daily capacity across the NFSLR would increase to 142,700 vehicles, and the combined AADT would be 157,300 in the Design (2037) year. The No Build Alternative would have a system daily capacity of 89,200 vehicles and a combined AADT of 138,000.

The AADT for the two existing bridges, compared to the No Build Alternative, suggests a traffic diversion of 54 percent from Prima Vista Boulevard and 16 percent from Port St. Lucie Boulevard to Alternative 6A in the Design (2037) year.

Table 3.21 Alternative 6A AADT Crossing the NFSLR

Location	AADT Crossing the NFSLR		
	Opening (2017)	Interim (2027)	Design (2037)
Prima Vista Boulevard	14,900	18,600	22,300
Crosstown Parkway	46,900	53,300	59,700
Port St. Lucie Boulevard	61,600	68,500	75,300
Total AADT (V = volume)	123,400	140,400	157,300
Total Capacity (C) ¹	142,700	142,700	142,700
Total V/C	0.86	0.98	1.10
Total AADT Exceeding Capacity (Three Bridges Combined)	n/a	n/a	14,600
¹ Combined capacity of all three NFSLR crossings.			

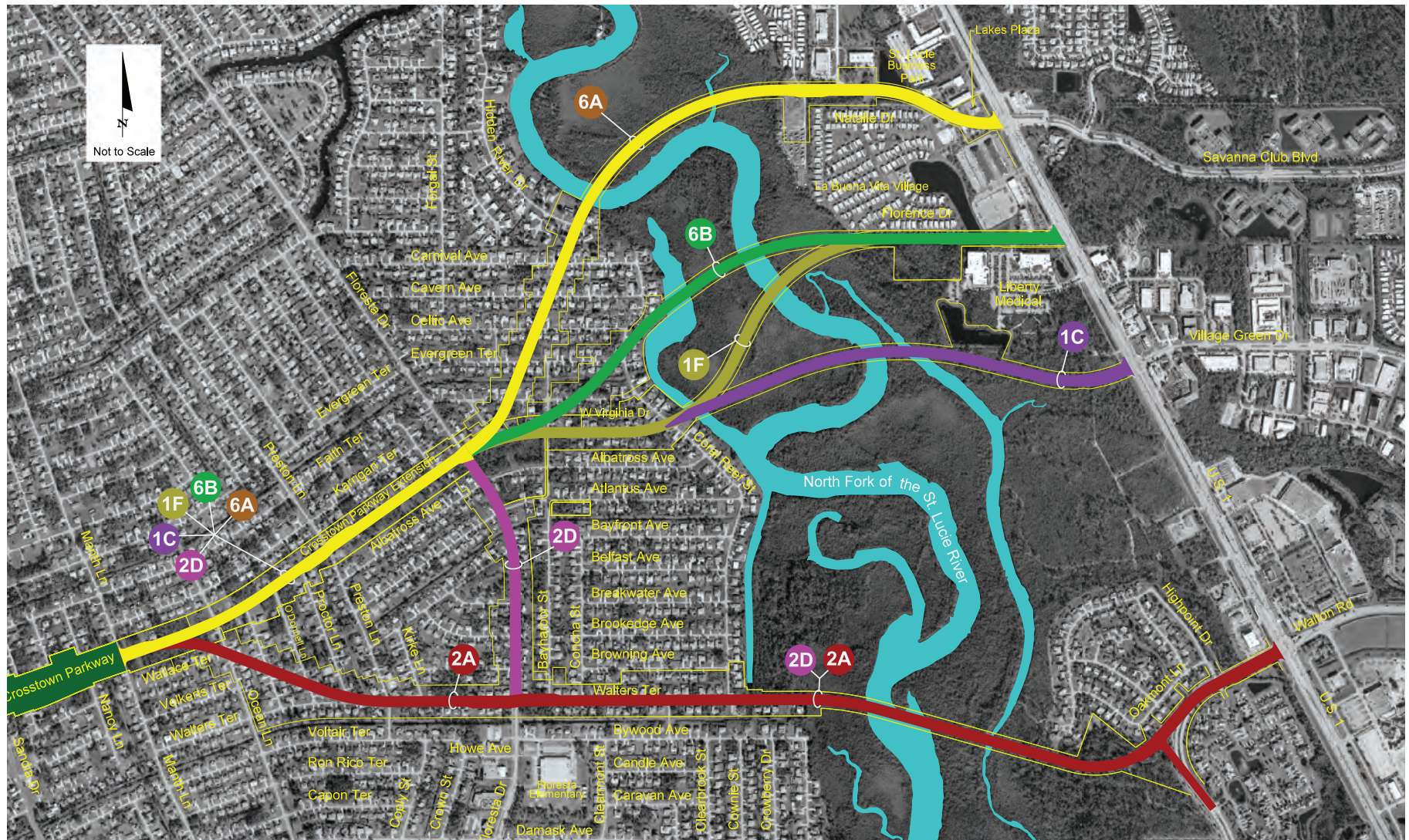
The intersection and arterial operations analyses were performed for Prima Vista Boulevard, Port St. Lucie Boulevard and U.S. 1 for the Opening (2017) and Design (2037) years for Alternative 6A. The detailed intersection and arterial analyses are presented in the DTTM. **Figures 3.68** and **3.69** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Opening (2017) year. **Figures 3.70** and **3.71** provide a summary of the AM and PM peak-hour intersection and arterial LOS for the Design (2037) year.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Prima Vista Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM peak-hour arterial analysis for Prima Vista Boulevard indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS D. The PM peak-hour arterial analysis for Prima Vista Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS E; however, the segment between Airoso Boulevard and U.S. 1 would operate at LOS D.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that Alternative 6A intersections would operate at LOS D or better. Also, the Design (2037) year AM and PM peak-hour arterial analysis for Alternative 6A indicates that the entire roadway between Bayshore Boulevard and U.S. 1 would operate at LOS C.

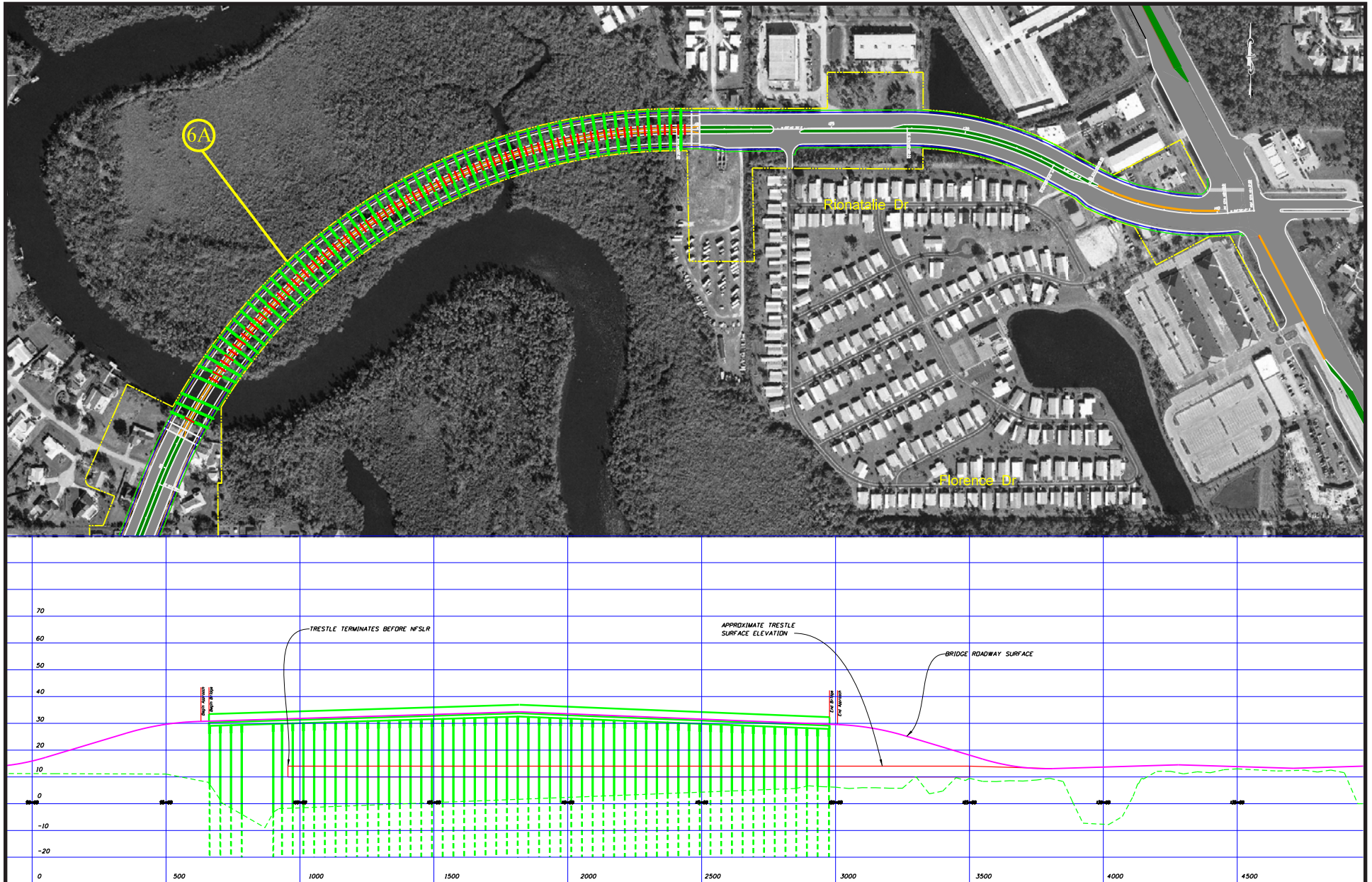
The Design (2037) year AM and PM peak-hour intersection analysis indicates that the Port St. Lucie Boulevard intersection with Bayshore Boulevard would operate at LOS E and F, respectively. The AM and PM peak-hour intersection analysis also indicates that the Port St. Lucie Boulevard and U.S. 1 intersection would operate at LOS E. Alternative 6A is the northern-most alignment and would provide less traffic relief to the Port St. Lucie Boulevard and U.S. 1 intersection as compared to Alternatives 2A, 2D, and 1C (similar to Alternatives 1F and 6B).

The Design (2037) year AM peak-hour arterial analysis indicates that Port St. Lucie Boulevard between Bayshore Boulevard and U.S. 1 would operate at LOS C. The PM peak-hour arterial analysis for Port St. Lucie Boulevard indicates that the segment between Bayshore Boulevard and Airoso Boulevard would operate at LOS F; and the segment between Airoso Boulevard and U.S. 1 would operate at LOS C or better.



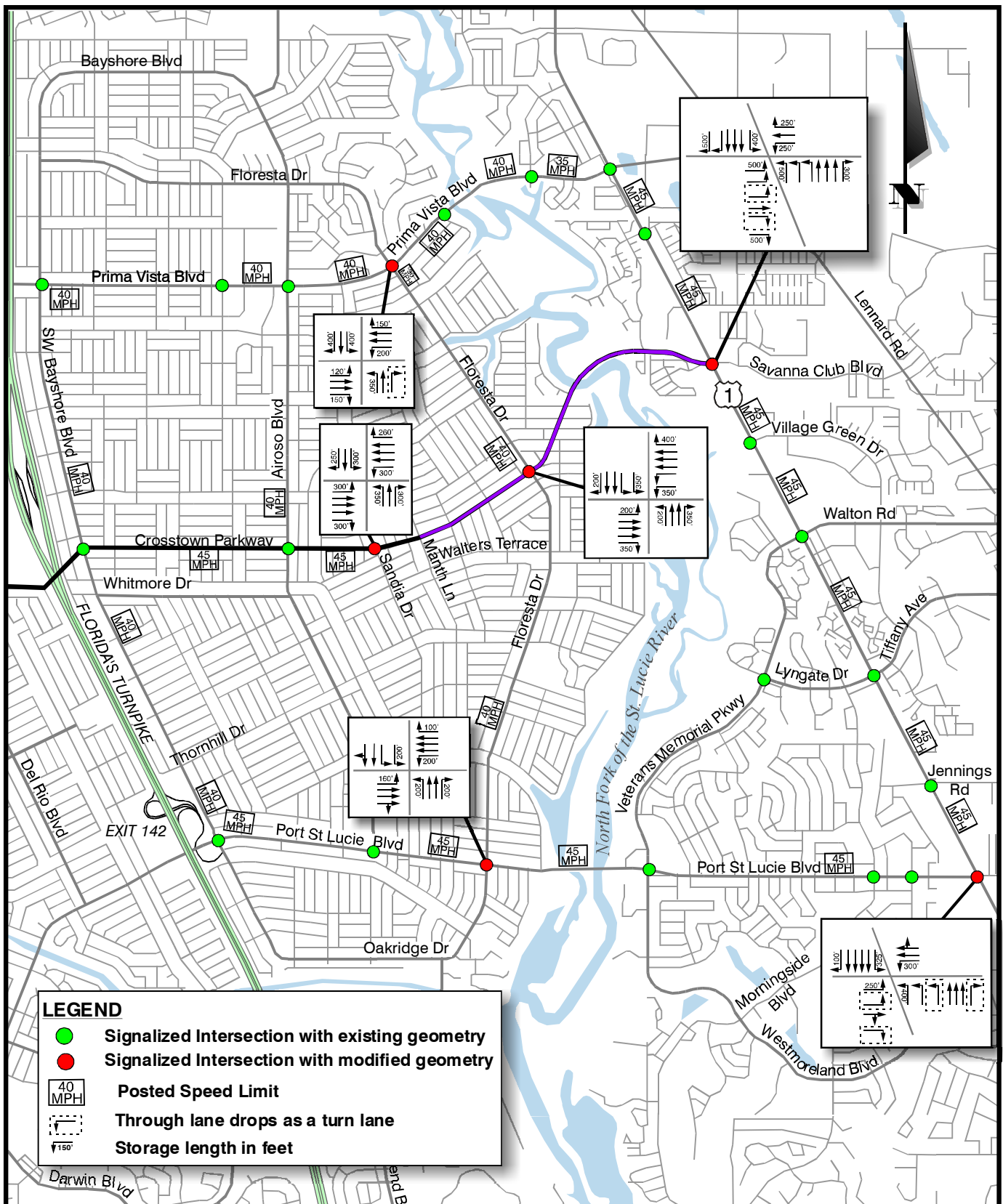
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Alternative 6A Alignment
 Figure 3.63



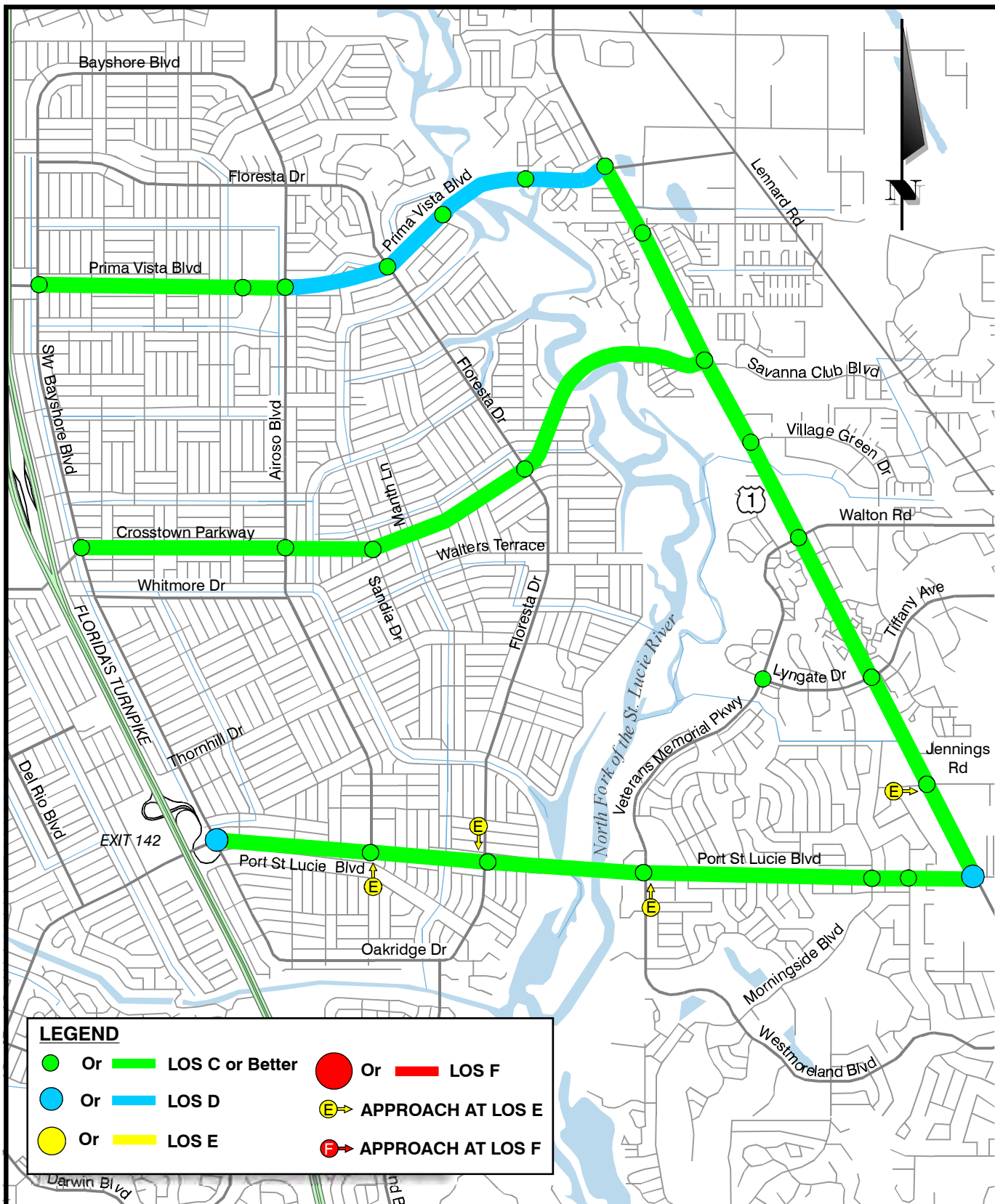
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Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
Bridge Plan and Profile Alternative 6A
 Figure 3.64



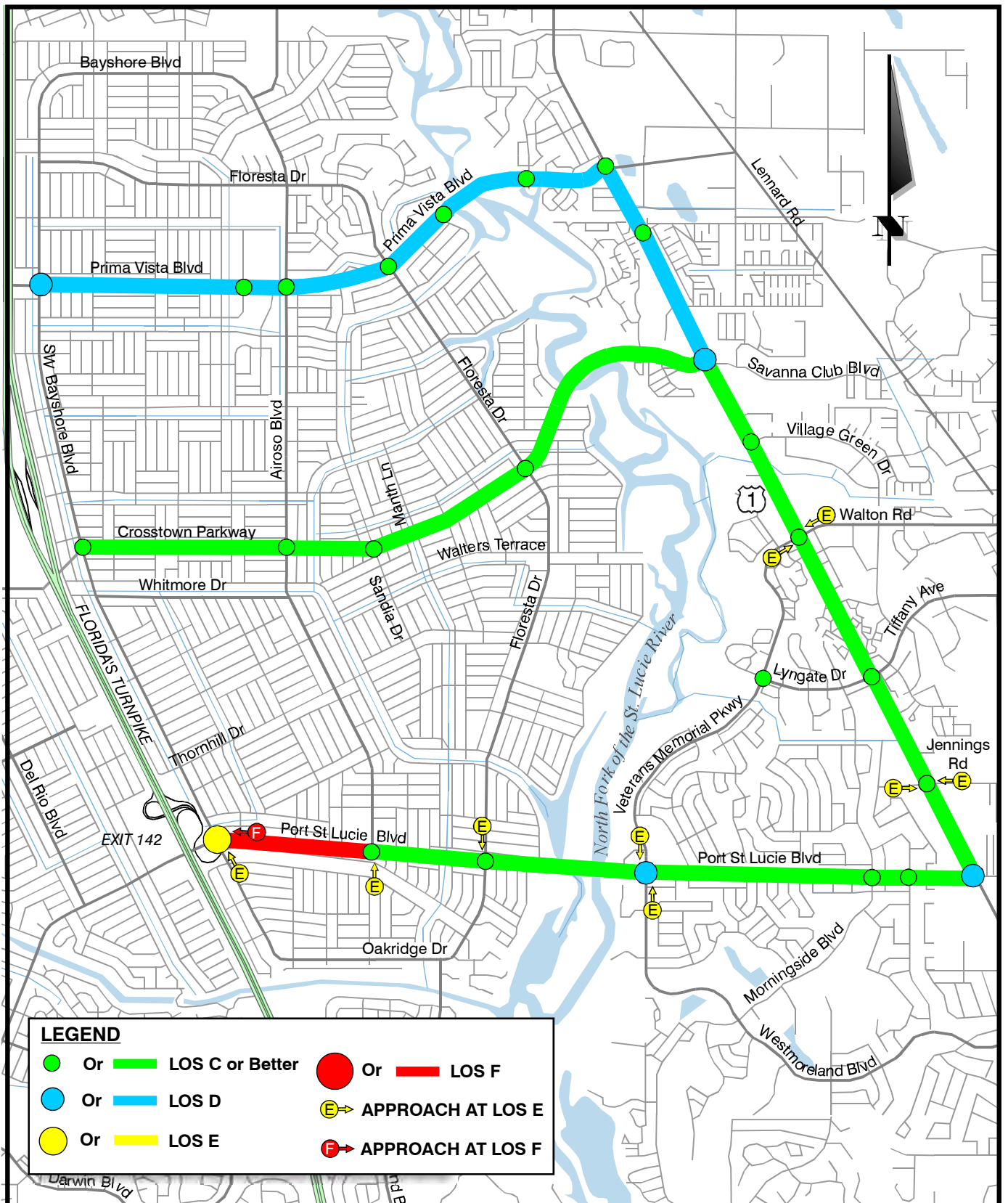
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 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Alternative 6A Geometry
 Figure 3.65**



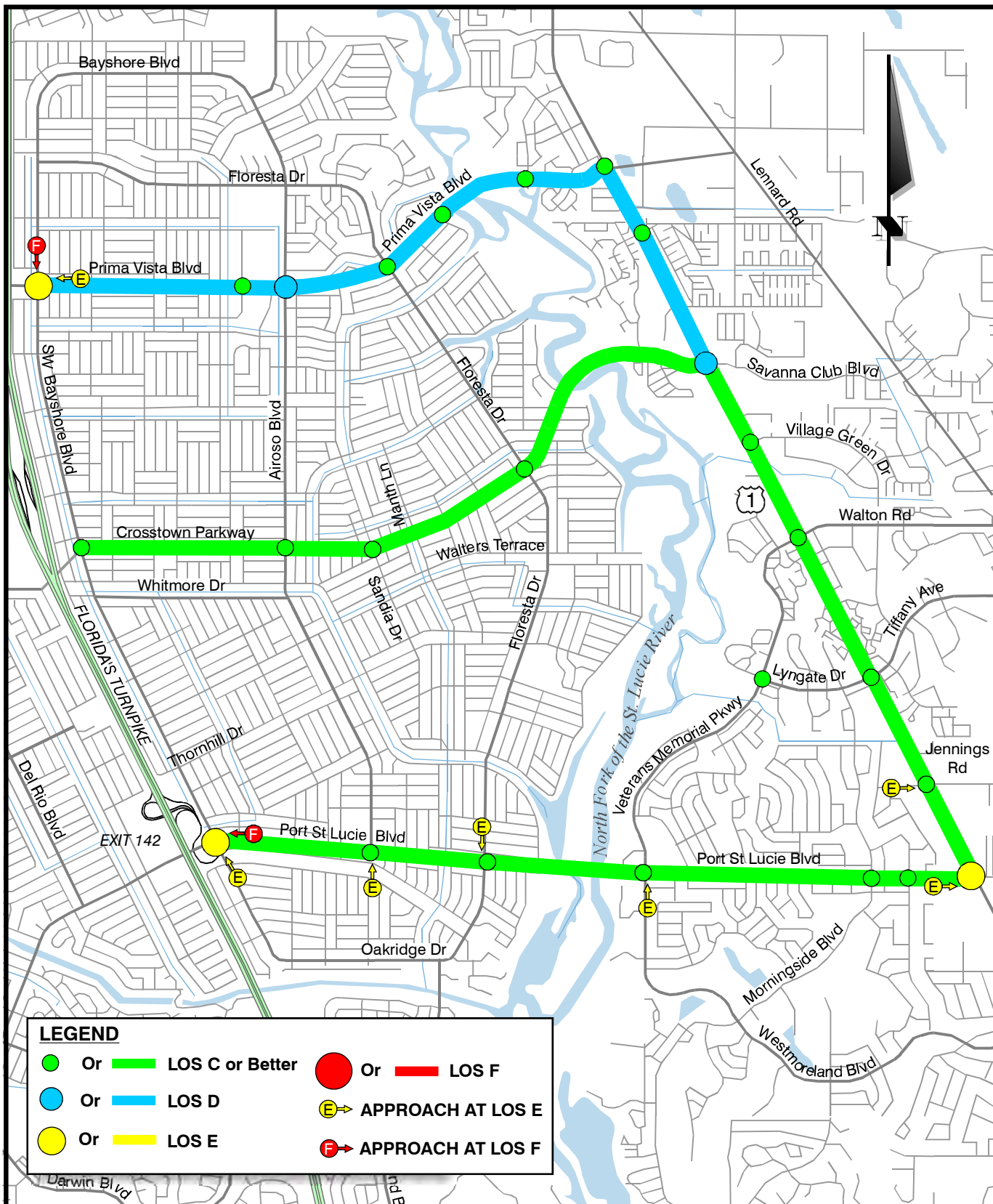
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 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 AM Peak Hour Level of Service-Alternative 6A
Figure 3.68



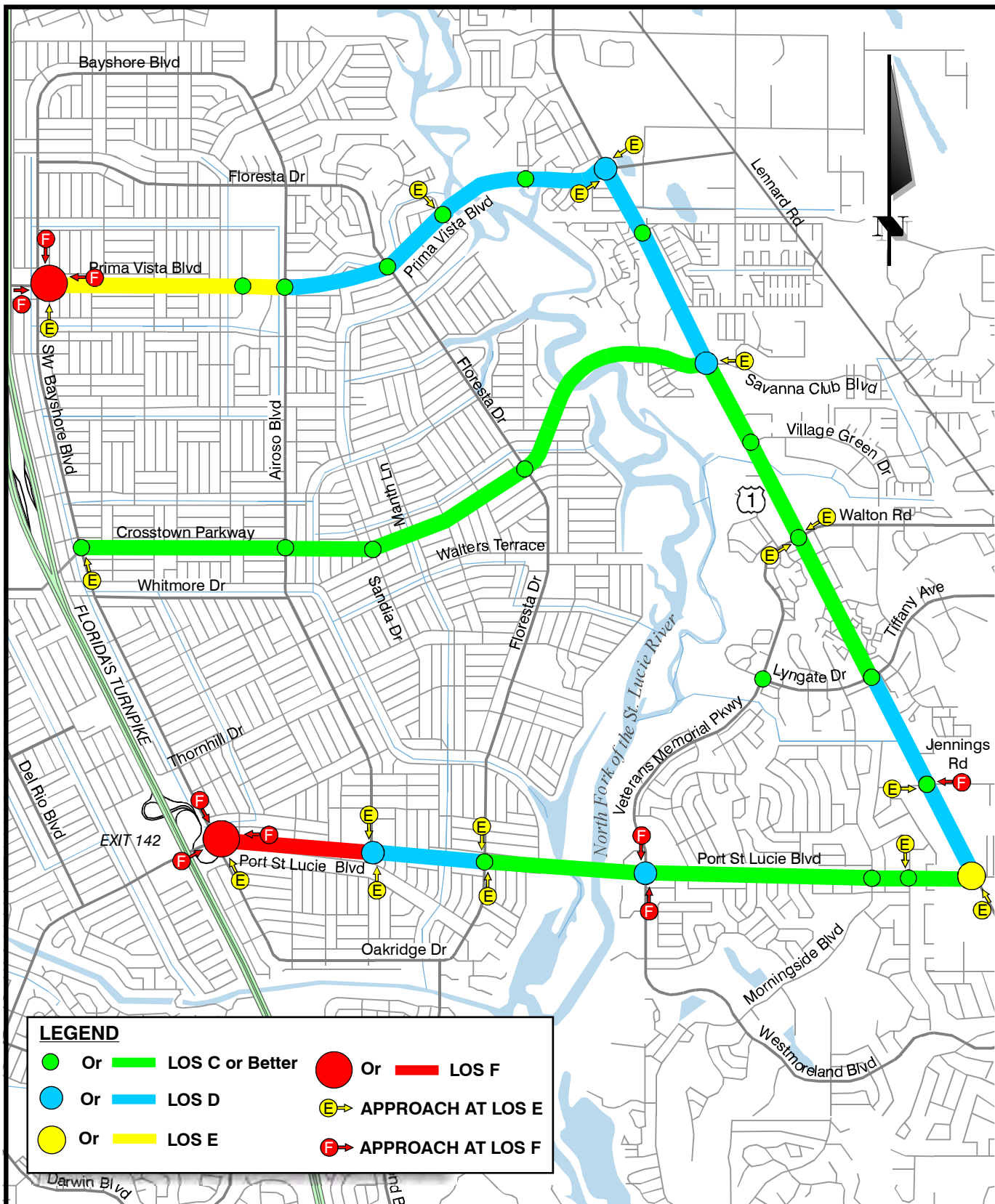
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 FP No. 7777-087-A
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**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2017 PM Peak Hour Level of Service-Alternative 6A
Figure 3.69



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 AM Peak Hour Level of Service-Alternative 6A
Figure 3.70



FM No. 410844-1-28-01
 FP No. 7777-087-A
 ETDM No. 8247

**Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement**
 2037 PM Peak Hour Level of Service-Alternative 6A
Figure 3.71

As discussed in Section 3.2.4.1 (No Build Alternative Impacts), both Bayshore Boulevard intersections with Prima Vista Boulevard and Port St. Lucie Boulevard experience capacity deficiencies that could be addressed by localized intersection improvements. However, localized intersection upgrades at these two locations would not improve the capacity deficiencies on Prima Vista Boulevard and Port St. Lucie Boulevard between Airoso Boulevard and U.S. 1 in the No Build Alternative.

The Design (2037) year AM and PM peak-hour intersection analysis indicates that except for Port St. Lucie Boulevard and U.S. 1 intersection, all other intersections along U.S. 1 would operate at LOS D or better. The AM and PM peak-hour arterial analysis for U.S. 1 indicates that the roadway between Prima Vista Boulevard and Port St. Lucie Boulevard would operate at LOS D or better.

The Design (2037) year system performance measure base on CORSIM for Alternative 6A indicates 28.89 mph average speed and 0.85 min/mi of delay in the AM peak hour and 24.76 mph and 1.21 min/mi in the PM peak hour. The AM and PM peak-hour system-wide average speed improved by 22.2 percent and 34.0 percent, respectively, as compared to the No Build Alternative. The AM and PM peak-hour system-wide delay decreased by 33.6 percent and 39.5 percent, respectively, as compared to the No Build Alternative.

3.2.4.2.7.2 Social and Economic Impacts (6A)

Alternative 6A would have the fifth highest number of occupied residential relocations (85) compared to all build alternatives and would traverse an established neighborhood for approximately ½-mile east of Floresta Drive. If the number of previously purchased developed properties is included (33), a total of 118 residential properties would be affected by this alternative. Alternative 6A would have substantial social impacts on both sides of the NFSLR. The western portion of the proposed parkway would traverse diagonally across six residential streets, creating substantial community cohesion and local mobility impacts as well as substantial visual and noise impacts. This alternative would also require relocation of the access road into the La Buona Vita community from the current location along U.S. 1 to the proposed Crosstown Parkway Extension. The new access road would change traffic flows within the community, increasing noise and visual impacts in the vicinity of the new access road.

Of the 85 occupied residential properties to be acquired, it is estimated based on the census data, that 31 minority households (36.47 percent of the total), 24 disabled households (28.24 percent of the total), and 12 elderly households (14.12 percent of the total), would need to be relocated. Ten businesses would be displaced along the U.S. 1 corridor. No community facilities (non-Section 4(f) resources) would be directly or indirectly affected. Alternative 6A would remove approximately 0.06 percent of the City's tax base and 0.06 percent of the County's tax base. The overall percentage of minorities in the County is 36.1 percent, which is exceeded by Alternative 6A. Only Alternative 6A has the potential for affecting neighborhoods with a higher than average number of minority households.

3.2.4.2.7.3 Natural and Physical Resource Impacts (6A)

Alternative 6A has 133 residential units, all represented as noise sensitive receptors. Of these, 42 receptors would be impacted by noise greater than the Noise Abatement Criteria (impacted receptors). The noise barrier analysis revealed that 18 of the impacted receptors could be benefited by a noise barrier and 24 could not be benefited by a noise barrier. This alternative has the highest number of non-benefited impacted receptors because the roadway alignment passes diagonally through residential lots west of the NFSLR. This alignment impacted more homes while significantly increasing the length of the barrier needed to protect each home. Noise barriers were evaluated but were found to not be reasonable and feasible at several locations.

It would have the third highest direct impact (7.69 acres) on wetlands (7.67 functional loss units, which includes direct and indirect impacts) and the least total upland impacts (0.15 acres) compared to the other build alternatives. It would have the lowest impact on essential fish habitat (8.47 acres), which includes 7.69 acres of palustrine and mangrove habitats (same as wetlands) and 0.78 acres of open water habitat (primarily shading).

For purposes of Section 4(f), Alternative 6A would use 0.01 acres of the AP and would avoid a use of the SPSP. It would not use lands from Kiwanis Park.

3.3 Preferred Alternative

The impacts associated with the No Build Alternative and the six build alternatives were presented at the project Public Hearing on September 22, 2011. A summary of the Public Hearing is discussed in Section 8.0 (Comments and Coordination). The project team gave full consideration to all comments received. Then the study consultant facilitated the development of a process with the City, FDOT, and FHWA for the selection of a Locally Preferred Alternative (LPA). The process included a thorough assessment of the data and analysis for the build alternatives as detailed above, and as presented in Section 5.0 (Environmental Consequences) of this EIS. In addition, these alternatives are evaluated under the provisions of Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (Section 6.0 – Section 4(f) Evaluation). This section presents the process and evaluation criteria utilized in selecting the LPA and subsequently the Preferred Alternative. On November 14, 2011, this effort culminated in the selection of Alternative 1C as the LPA. On January 23, 2012, the City Council adopted Alternative 1C as the LPA for the extension of the Crosstown Parkway from Manth Lane to U.S. 1.¹⁷ The FHWA concurred with the identification of Alternative 1C as the Preferred Alternative.¹⁸

As used in this document, what is the difference among the terms Build Alternative, Locally Preferred Alternative, and Preferred Alternative?

- **“Build Alternative”** refers to one of the six reasonable alternatives carried through the alternatives analysis and Public Hearing (Alternatives 2A, 2D, 1C, 1F, 6B, and 6A);
- **“Locally Preferred Alternative” (LPA)** refers to the alternative identified from among the build alternatives through the City’s selection process and adopted by the City Council on January 23, 2012, and then recommended to FHWA as the preferred alternative (Alternative 1C); and
- **“Preferred Alternative”** refers to the alternative FHWA identified as the Preferred Alternative on July 30, 2012.

3.3.1 Selection of the Preferred Alternative

Following the Public Hearing and an examination of all public and agency comments and prior to the identification of a Preferred Alternative by FHWA, the City, as the project sponsor, implemented a process of evaluating and selecting a LPA. This process included five evaluation criteria and a scoring system to evaluate each criterion. The process was developed in coordination with the City, the FDOT, and the FHWA.

¹⁷ Resolution 12-R18 (Appendix E)

¹⁸ Letter dated July 30, 2012 (Appendix A)

The first step was to select and define evaluation criteria. Five general criteria were developed, based on the general outline of the EIS:

- Meeting the Project Purpose and Need;
- Social/Community Impacts;
- Natural Environment Impacts;
- Physical Impacts; and
- Project Cost.

Within each criterion, a number of “factors” were agreed upon, to help put focus on the scoring by identifying priority attributes. Each criterion had 6 to 8 factors except for Project Cost, which did not have separate factors.

The second step was to assign a number of possible “points” for each criterion. The City, FDOT, and FHWA agreed on a system to assign each alternative up to 50 points. Initially, assigning each of the five criteria up to 10 points each was considered. However, a different system was agreed upon based on the following rationale.

- Meeting the Project Purpose and Need was given a maximum of 20 points because the City would not proceed with any alternative that did not meet the project purpose and need. The alternatives would need to address the substantial traffic capacity deficiencies in the City. Specifically, each alternative would need to address capacity deficiencies at the two existing crossings of the NFSLR at Port St. Lucie Boulevard and Prima Vista Boulevard. Traffic analysis shows that the existing NFSLR bridges are currently experiencing travel delays, and will not be able to meet the projected travel demand across the NFSLR in the future. This criterion is the basis for the project; thus, this criterion was deemed the most important and was weighted accordingly.
- The Social/Community Impacts criterion was given a maximum of 10 points. Based on comments received from the public and appointed and elected officials, these types of impacts are important to the community.
- The Natural Environment criterion was also given a maximum of 10 points. This criterion is important to the resource agencies that have jurisdiction over resources potentially impacted by the project.
- The Physical Impacts criterion was given a maximum of 5 points. The issues of air quality, floodplains, contamination, and water quality have been primarily addressed through the design features of the proposed project.
- The Project Cost criterion was also given a maximum of 5 points. Capital costs for the project have been planned for, and are budgeted in the local and regional transportation plans.

The evaluation of the use of public lands pursuant to Section 4(f) of the USDOT Act of 1966 is a process separate from NEPA. Thus, the potential use of Section 4(f) lands for a given build alternative was not assigned points during the evaluation of alternatives. Under Section 4(f), FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless it is deemed to be a de minimis affect to Section 4(f) property or there is no feasible and prudent alternative to the use of the Section 4(f) property and the action includes all possible planning to minimize harm to the property resulting from the use. Thus, only feasible and prudent alternatives can be selected and could be different from the highest scoring alternative under the LPA evaluation process.

Finally, public support was considered during the final screening of the alternatives. While public comments are not a scientific sample of public opinion, under NEPA, public sentiment is considered in the selection of an alternative.

Thus, the final criteria and scoring points were:

- Meeting the Project Purpose and Need (0 – 20 pts);
- Social/Community Impacts (0 – 10 pts);
- Natural Environment Impacts (0 – 10 pts);
- Physical Impacts (0 – 5 pts); and
- Project Cost (0 – 5 pts).

The third step was to develop rules for the scoring. The following rules were applied to the LPA scoring:

- For each criterion, specific factors (for each criterion) evaluated in the DEIS were considered in determining the total score;
- Certain factors have a greater relative importance and were given a higher priority in the evaluation;
- Scorers examined the total information about each alternative for each criterion using data and information from the DEIS, agency and public comments, Public Hearing feedback, and best professional judgment;
- The maximum total number of points for an alternative was 50;
- For each criterion, the highest ranking alternative received the maximum number of points;
- The lowest ranking received fewer points, but not necessarily zero points; and
- There can be a tie between two or more alternatives.

3.3.1.1 Alternatives Scoring

Using the agreed-upon criteria and scoring system, on November 14, 2011, the City's consultant team evaluated and ranked each alternative. Each team member independently scored each alternative for the specific criterion that reflected the team member's area of expertise. A discussion of and rationale for the scoring results are provided for each of the five criteria.

3.3.1.1.1 Criterion 1 – Meeting the Project Purpose and Need (0-20 points)

Six factors were considered in determining the score for this criterion. (Note: The first three factors were considered to be more important in the evaluation.)

- Factor 1** Does the alternative meet the project purpose and need?
- Factor 2** How well does the alternative relieve traffic congestion on existing bridges and roadways?
- Factor 3** Does the alternative address or create operational issues?
- Factor 4** How well does the alternative meet the City's long-range planning objectives and the TPO's Regional Long Range Transportation Plan?
- Factor 5** Does the alternative improve medical emergency response and evacuation times?
- Factor 6** Consideration of public comments.

Criterion 1, Factor 1: Does the alternative meet the project purpose and need?

The Crosstown Parkway Extension project is needed to address the severe traffic congestion within the City. In particular, the two existing bridges over the NFSLR already exceed capacity and operate below acceptable levels at critical times of the day. If this is not addressed, the level of traffic congestion will only worsen as the population grows as predicted over the next few decades.

The No Build Alternative does not meet the purpose and need because the existing bridges (Prima Vista Boulevard and Port St. Lucie Boulevard) will continue to operate at failing levels of service. Further, the existing bridges do not have sufficient capacity to accommodate future traffic demand. Therefore, the No Build Alternative received a score of 0. All of the build alternatives meet the purpose and need. The degree to which the purpose and need is met varies by build alternative. The remaining factors were used to differentiate the differences among the build alternatives and determine the score for each of them based on this criterion.

Criterion 1, Factor 2: How well does the alternative relieve traffic congestion on existing bridges and roadways?

Regardless of the location of each build alternative, traffic congestion on Prima Vista Boulevard would be relieved to acceptable levels of service on a daily basis. The daily maximum service volume (MSV) for Prima Vista Boulevard is 35,700 and the forecasted daily volume, with the proposed Crosstown Parkway Extension, ranges between 17,000 and 27,700. In recognition of this, more emphasis was placed on how well alternatives would relieve congestion on the Port St. Lucie Boulevard crossing.

Port St. Lucie Boulevard has higher congestion levels than Prima Vista Boulevard because the City's growth pattern is primarily in the southwest area located west of I-95. Between 2000 and 2008, the City annexed approximately 24,000 acres, most of it west of I-95 in the City's Western Annexation Area. The area includes seven large-scale Developments of Regional Impact (DRIs) and several smaller planned mixed-use and residential PUD-type communities. Based on the location of the City's growth, it is logical to assume that the future east-west traffic will primarily travel via Port St. Lucie Boulevard and the Crosstown Parkway Extension. Therefore, the closer the build alternative is located to Port St. Lucie Boulevard, the more relief the build alternative will provide to this bridge.

The data shown in **Table 3.22** reflect the percent and daily traffic diversion from the existing bridges to Crosstown Parkway. A two-tier process was used to determine the build alternative that would provide the most balanced relief to both Prima Vista Boulevard and Port St. Lucie Boulevard bridges. For Tier One, the data show that Alternatives 2A, 2D, and 1C would provide the most relief to Port St. Lucie Boulevard bridge (over 20 percent) as compared to Alternatives 1F, 6B, and 6A (less than 20 percent). For Tier Two, of the three build alternatives (2A, 2D, and 1C) that would relieve Port St. Lucie Boulevard the most, Alternative 1C would relieve Prima Vista Boulevard the most (52 percent as compared to 44 and 43 percent for 2A and 2D, respectively); – thereby providing more balanced traffic relief for the two existing bridges.

Table 3.22 Percent Diversion from the Existing Bridges to Crosstown Parkway

Existing Bridge	Diversion	2A	2D	1C	1F	6B	6A
Prima Vista Boulevard	Percent	44%	43%	52%	65%	65%	54%
	Daily Traffic	21,100	20,700	25,400	31,400	31,400	26,100
Port St. Lucie Boulevard	Percent	23%	22%	21%	18%	18%	16%
	Daily Traffic	21,000	19,400	18,600	15,900	15,900	14,300

Criterion 1, Factor 3: Does the alternative address or create operational issues?

Alternatives 2A and 2D would connect to U.S. 1 at the existing signalized intersection with Veterans Memorial Parkway/Walton Road. These two alternatives also would create a new signalized intersection where the Crosstown Parkway Extension intersects Veterans Memorial Parkway, approximately 1,500 feet west of U.S. 1. The analyses indicate that the Crosstown Parkway Extension between Veterans Memorial Parkway and U.S. 1 would operate at failing levels of service (the new roadway will be congested). Additionally, the intersection of the Crosstown Parkway Extension and U.S. 1 (for these two alternatives) is also expected to operate at a failing level of service. The Crosstown Parkway and U.S. 1 intersection would experience long queues. Eastbound traffic at this intersection would spill back to the upstream intersection (Crosstown Parkway and Veterans Memorial Parkway) due to the short distance between U.S. 1 and Veterans Memorial Parkway.

Alternative 2A would impact the traffic flow on U.S. 1 because it has the highest traffic diversion from Port St. Lucie Boulevard. The Crosstown Parkway Extension and U.S. 1 intersection would require more time associated with the signal operations to accommodate the turning volumes from its western leg. Thus, north-south (U.S. 1) traffic would have less time available to traverse this roadway section. Alternative 2A has one of highest numbers of operational issues (4) as summarized in **Table 3.23**.

Table 3.23 Hot Spot/Operational Issues for Each Build Alternative

Hot Spot/Operational Issue	No Build	2A	2D	1C	1F	6B	6A
New Road Congested?	NA	Y	Y	N	N	N	N
U.S. 1 Congested?	Y	Y	N	N	Y	Y	N
U.S. 1 Progression Impacted?	Y	Y	N	N	Y	Y	N
Increases Travel Time Across River?	Y	N	N	N	N	N	N
Prima Vista at U.S. 1 Congested?	Y	N	N	N	N	N	N
New Road at U.S. 1 Congested?	NA	Y	Y	N	N	N	N
Port St. Lucie at U.S. 1 Congested?	Y	N	N	N	Y	Y	Y
U.S. 1 Signal Spacing and Medians Impacted?	N	N	N	N	Y	Y	N
Total Number of Hot Spots or Operational Issues	5	4	2	0	4	4	1

The analysis for Alternative 2D indicated that the Crosstown Parkway Extension where it traverses north-south between two new signalized intersections along Floresta Drive, at West Virginia Drive, and at Walters Terrace, would be congested and operating at a failing condition. Although Alternative 2D would have only two operational issues, this alternative would require two 90-degree turns at the above-noted signalized intersections and would require triple right- and triple left-turn lanes to accommodate the projected volumes. Without the triple right- and triple left-turn lanes, these intersections would not operate at an acceptable level of service. Further, this geometry or "S" curve would not provide an efficient east-west travel time as compared to the other build alternatives.

Alternative 1C would connect to U.S. 1 creating a fourth leg (west leg) at the existing signalized intersection with Village Green Drive. The analysis indicated that the intersection of U.S. 1 and the Crosstown Parkway corridor is expected to operate at an acceptable level of service. Further, the U.S. 1 traffic flow within the study area would not be negatively impacted. Alternative 1C would not have any operational issues.

Alternatives 1F and 6B would connect to U.S. 1 at a new three-leg intersection between Savanna Club Boulevard and Village Green Drive. The new signalized intersection would require a variance to the FDOT Access Management Standards identified in Chapter 14-97 of the Florida Administrative Code which requires the space between signals along U.S. 1 be at least ½-mile (2,640 feet). The new intersection of Crosstown Parkway Extension at U.S. 1 would be located 1,240 feet south of the existing Savanna Club Boulevard signalized intersection and 1,355 feet north of the existing Village Green Drive signalized intersection. A new intersection at this location would require median opening modifications along U.S. 1. U.S. 1 between Savanna Club Boulevard and Crosstown Parkway is expected to have high congestion levels and the north-south traffic flow would be negatively impacted due to the additional signalized intersection. Further, the Port St. Lucie Boulevard and U.S. 1 intersection would operate at a failing level of service because these alternatives provide the second lowest traffic diversion from Port St. Lucie Boulevard. Alternatives 1F and 6B, along with 2A have the highest number of operational issues (4).

Alternative 6A connects to U.S. 1 at the existing signalized intersection of Savanna Club Boulevard. The only operational issue with Alternative 6A is that the Port St. Lucie Boulevard and U.S. 1 intersection would continue to operate at congested levels because this alternative has the lowest traffic diversion from the Port St. Lucie Boulevard corridor.

Criterion 1, Factor 4: How well does the alternative meet the City's long-range planning objectives, and the TPO's Regional Long Range Transportation Plan?

All build alternatives meet the long-range planning objectives of the City Comprehensive Plan and the Transportation Planning Organization Regional Long Range Transportation Plans (TPO LRTP). A third crossing of the NFSLR has been recognized as a needed component of the City's transportation system since the late 1980s. Current transportation planning in Port St. Lucie focuses on east-west corridors, mass transit, bicycle paths, and pedestrian access. It is anticipated that the Crosstown Parkway will provide relief to the existing east-west congestion. The Crosstown Parkway has also been identified as a proposed hurricane evacuation route.

The City was designed primarily as a bedroom and retirement community without a town center or centralized commercial business. The formation of a Community Redevelopment Agency (CRA) is one of the steps taken by the City to change the bedroom community development pattern. The most important CRA district is the City Center located east of U.S. 1 and Veterans Memorial Parkway/Walton Road intersection. The City Center houses the 100,000-square foot Port St. Lucie Civic Center (built in 2007) that was built to be the anchor of a mixed-use development that would provide various civic and commercial services to the eastern part of the City. Alternatives 2A and 2D would provide direct access to the City Center.

Criterion 1, Factor 5: Does the alternative improve medical emergency response and evacuation times?

All build alternatives would provide a benefit to the emergency response time to the St. Lucie Medical Center located east of the U.S. 1 and Tiffany Avenue/Lyngate Drive intersection. **Table 3.24** summarizes the travel time reductions from the Bayshore Boulevard intersections with Prima Vista Boulevard, Crosstown Parkway, and Port St. Lucie Boulevard to the Medical Center as compared to the No Build

Alternative. The approximate improvement in travel time for each build alternative compared to the No Build Alternative during peak periods is discussed below.

The improvement in travel time to the St. Lucie Medical Center from the Prima Vista Boulevard and Bayshore Boulevard intersection for any build alternative ranges from 3.4 to 3.8 minutes better than the no-build condition. The improvement in travel time to the St. Lucie Medical Center from the Port St. Lucie Boulevard and Bayshore Boulevard intersection ranges from 4.5 to 5.0 minutes better than the no-build condition. The proposed extension would improve the emergency response time along the parallel corridors; however, the magnitude of the improvement in travel time would not significantly vary among the build alternatives.

The improvement in travel time along the proposed Crosstown Parkway Extension compared to the No Build Alternative would result in greater travel time savings (except Alternative 2D) to the St. Lucie Medical Center than for either the Prima Vista Boulevard or Port St. Lucie Boulevard routes. This is reasonable considering that the Crosstown Parkway Extension would have fewer access points thereby minimizing traffic conflicts as compared to the Prima Vista Boulevard and Port St. Lucie Boulevard corridors. The no-build condition traffic from Crosstown Parkway would need to divert to either Prima Vista Boulevard or Port St. Lucie Boulevard to reach the facility. For Alternative 2D, because of the two 90-degree turns on Floresta Drive, the improved travel time to the St. Lucie Medical Center would be less as compared to the other build alternatives, and almost the same as the Port St. Lucie Boulevard corridor. Alternatives 1F and 6B have the best emergency response time benefit as compared to the No Build Alternative (9.6 minutes).

Table 3.24 Improved Travel Time (minutes) Compared to the No Build Alternative

Intersection with Bayshore Boulevard	2A	2D	1C	1F	6B	6A
Prima Vista Boulevard	3.4	3.5	3.4	3.8	3.8	3.4
Crosstown Parkway	6.6	5.1	6.6	9.6	9.6	7.1
Port St. Lucie Boulevard	5.0	5.0	4.9	4.7	4.7	4.5

Criterion 1, Factor 6: Consideration of public comments

Most of the public comments received during the Alternatives Meeting (2010) and the Public Hearing (2011) supported building the Crosstown Parkway Extension. In addition, a bond referendum in 2005 to build the Crosstown Parkway was supported by 89.2 percent of voters. The comments did not provide any new information on the degree to which each alternative would or would not meet the project purpose and need.

Meeting the Project Purpose and Need Scoring Rationale (0 - 20 pts)

The scoring results for Meeting the Project Purpose and Need criterion are shown in **Table 3.25**. The following is a summary of the considerations used to score the criterion of Meeting the Project Purpose and Need:

- The No Build Alternative received the lowest score (0 points) because it does not meet the purpose and need based on priority factor one.

- Alternative 1C received the highest score (20 points) of the build alternatives:
 - It would relieve the traffic congestion on both existing bridges (balanced traffic diversion from both bridges), it would have no operational issues.
 - It would provide emergency response time benefit.
 - It is consistent with the goals and objectives from the City's Comprehensive Plan and TPO LRTP.
- Alternatives 2A and 6A tied with a score of 15 points based on the following:
 - Alternative 2A would provide the highest traffic relief to Port St. Lucie Boulevard, but it would have one of the highest numbers of operational issues (4) associated with congestion on the Crosstown Parkway and U.S. 1 corridors as well as the intersection of Crosstown Parkway and U.S.1.
 - Alternative 6A would provide the lowest traffic relief to Port St. Lucie Boulevard, but it would have the second highest emergency response time benefit.
 - Alternative 6A would have only one operational issue associated with congestion at the Port St. Lucie Boulevard and U.S. 1 intersection.
- Alternatives 2D, 1F, and 6B tied for the lowest score of the build alternatives (13 points) based on the following:
 - Alternative 2D has an "S" curve design that would not provide efficient east-west mobility. The two new 90-degree intersections at Floresta Drive would require triple right- and left-turn lanes, and two additional signalized intersections between Floresta Drive and U.S. 1 would be required. The alternative would result in two operational issues associated with congestion on the Crosstown Parkway corridor and its intersection terminus with U.S. 1. It also would provide the lowest emergency response time benefit.
 - Alternatives 1F and 6B are similar to Alternative 6A in providing less relief to Port St. Lucie Boulevard as compared to 2A, 2D, and 1C. These two alternatives would have the highest number of operational issues (4) associated with congestion on the U.S. 1 corridor and the Port St. Lucie Boulevard and U.S. 1 intersection. These alternatives would also impact signal spacing requirements and median openings along U.S. 1.

Table 3.25 Meeting Project Purpose and Need Scores

No Build	2A	2D	1C	1F	6B	6A
0	15	13	20	13	13	15

3.3.1.1.2 Criterion 2 – Social/Community Impacts (0-10 points)

Eight factors were considered in determining the score for this criterion. The first two factors were considered to be more important in the evaluation.

- Factor 1** Consider the number of residential dwelling unit relocations that would result from the alternative (includes previously purchased dwelling units).
- Factor 2** How does the alternative affect community cohesion and mobility?
- Factor 3** Consider the number of vacant residential properties impacted by the alternative.
- Factor 4** Consider the number of businesses impacted by the alternative.
- Factor 5** How many impacted receptors cannot be benefited by a noise wall?
- Factor 6** What visual impacts will result from the alternative?
- Factor 7** Consideration of agency comments.
- Factor 8** Consideration of public comments.

Criterion 2, Factor 1: Consider the number of residential dwelling unit relocations that would result from the alternative (includes previously purchased dwelling units).

Although all factors were considered to be both relevant and important, the impacts associated with the relocation of residents were determined to have a greater relative importance and were, therefore, given a higher priority in the scoring for this criterion. The severity of the relocation impacts associated with each alternative is commensurate with the number of relocations that would occur with the particular alternative. Therefore, for this factor, the alternative with the highest number of relocations contributed most to a lower score for Social/Community impacts. The alternative with the fewest number of residential relocations contributed to a higher (better) score.

The residential relocations are summarized in **Table 3.26**. The No Build Alternative has no relocations, and would therefore be the best performer for this factor. The build alternative with the lowest number of relocations is 1C, and thus it is the next best performer for this factor. As the number of relocations increases, the performance decreases, and therefore Alternative 2D with the highest number of relocations is the poorest performer for this factor.

Table 3.26 Residential Relocations

No Build	2A	2D	1C	1F	6B	6A
0	145	170	100	124	134	118

Criterion 2, Factor 2: How does the alternative affect community cohesion and mobility?

The impacts associated with community cohesion and mobility were determined to have a greater relative importance in determining how an alternative impacts the community and were therefore given a higher priority in the scoring for this criterion.

The No Build Alternative would have the least overall impact on community cohesion and mobility since it would not physically impact any residents, homes, or roadways, although it is understood that the No Build Alternative would result in other impacts to the community in terms of increased congestion on area roadways and impacts associated with that congestion. Further, the No Build Alternative would not provide the regional connectivity provided by the build alternatives across the NFSLR.

All build alternatives would improve the regional connectivity across the natural barrier created by the NFSLR, but each would locally impact community cohesion and mobility through construction of a 6-lane divided parkway through established neighborhoods. This would impact mobility across the proposed parkway and introduce dead-end streets, cul-de-sacs, and redirected streets within neighborhoods along its length. In general, a build alternative would have less impact on a community if it were constructed along an existing road right of way, thereby limiting impacts primarily to those residents directly abutting the road. Further, a build alternative that cuts diagonally across a community would tend to have a greater impact on local community mobility and cohesion because it would bisect blocks and cut through streets that are used by residents as part of their local mobility network.

Alternative 2A would cut diagonally across four streets on the west end of the project where it connects from Manth Lane to Walters Terrace, then it would follow the existing alignment of Walters Terrace west of the NFSLR, tying into the existing alignment of Veterans Memorial Parkway east of the NFSLR. However,

the diagonal cut would not bisect the community. It would cut across the ends of streets that are not continuous within the community. Further, the impact of the new corridor on the west side of the NFSLR would not be as great as Alternatives 2D, 1F, 6B, and 6A because there is an existing canal that runs parallel to the alternative south of Walters Terrace, that already creates a natural barrier to north-south mobility in the area.

Alternative 2A would close Bywood Avenue at Floresta Drive. Currently, Bywood Avenue is one access point to Floresta Elementary School. Closing Bywood Avenue would require traffic to and from the school to be reoriented through other neighborhood streets. This would create higher traffic intrusion into the neighborhoods surrounding the school at student drop-off and pick-up times.

East of the NFSLR, Alternative 2A would tie into existing Veterans Memorial Parkway, impacting the community on the north side, west of U.S. 1. The proposed project would introduce a new median across the entrance to the neighborhood at SE Highpoint Drive, thereby eliminating left-turn ingress and egress to the community. A new signalized access intersection would be created at Oakmont Lane into the west side of the community, and would increase traffic in an area where there is less traffic today.

Alternative 2D would follow the existing alignments of three streets: West Virginia Drive, Floresta Drive, and Walters Terrace. This would generally be positive in terms of minimizing impacts to local community mobility. However, the community east of Floresta Drive, between West Virginia and Walters Terrace, would become partially isolated with only one primary means of ingress and egress from West Virginia Drive. Impacts at Floresta Elementary School and to the neighborhood north of the proposed Crosstown Parkway and west of U.S. 1 would be the same as under Alternative 2A. Alternative 2D also would impact Kiwanis Park along Floresta Drive.

Alternative 1C would be constructed along the existing West Virginia Drive alignment on the west side of the NFSLR so that cohesion and mobility issues would be limited to the lands immediately abutting the new parkway. Alternative 1C would not impact any residential communities on the east side of the NFSLR. As such, it would have the least impact to community mobility and cohesion of all build alternatives.

Alternative 1F would be constructed along the existing West Virginia Drive alignment on the west side of the NFSLR, the same as Alternative 1C. However, east of the NFSLR, the alternative would impact the cohesion within the La Buona Vita community. Alternative 1F would also impact access to local businesses where this alternative ties into U.S. 1. Currently the commercial strip center that includes Liberty Medical has northbound left-turn access into the complex from U.S. 1. Because of where Alternative 1F ties into U.S. 1, the median opening that provides this access would need to be closed. Northbound drivers would have to make a U-turn at the proposed Crosstown Parkway Extension to gain access to the complex, affecting the localized mobility for employees and patrons of the site.

Alternative 6B would follow existing West Virginia Drive, similar to Alternatives 1C and 1F, but would then be aligned in a northeast direction across three local streets on the approach to the NFSLR. For this reason, its impact to local cohesion and mobility would be greater than Alternatives 1F and 1C west of the NFSLR. East of the NFSLR, Alternative 6B is the same as Alternative 1F, and therefore it would have the same impacts to La Buona Vita and to Liberty Medical as Alternative 1F.

Alternative 6A would follow the existing West Virginia Drive to Floresta Drive, but would then cut diagonally in a northeast direction across six local streets for a distance of approximately ½-mile. This creates the largest impact on mobility and cohesion of all build alternatives. Alternative 6A also would impact La Buona Vita on the east side of the NFSLR because the access would be relocated to the rear of the community, affecting local traffic patterns and introducing more traffic into this part of the community.

Criterion 2, Factor 3: Consider the number of vacant residential properties impacted by the alternative.

For this factor, the degree of impact for each alternative corresponds directly with the number of vacant (undeveloped) residential property acquisitions that would occur with the particular alternative. Therefore, for this factor, the alternative with the highest number of vacant property acquisitions contributed most to a lower score for Social/Community impacts. The alternative with the fewest number of vacant parcel acquisitions contributed to a higher score. The vacant residential property impacts are summarized in **Table 3.27**. The No Build Alternative would have no acquisitions. The build alternative with the lowest number of vacant residential acquisitions is Alternative 2A. Alternatives 1C, 1F, 6B, and 6A would have only three more acquisitions than Alternative 2A. Therefore, all four of these alternatives ranked similarly. Alternative 2D would result in the greatest impact, requiring 61 vacant residential acquisitions.

Table 3.27 Vacant Residential Property Acquisitions

No Build	2A	2D	1C	1F	6B	6A
0	37	61	40	40	40	40

Criterion 2, Factor 4: Consider the number of businesses impacted by the alternative.

For this factor, the degree of impact for each alternative corresponds directly with the number of business relocations that would occur with each alternative. Therefore, the alternative with the highest number of business relocations contributed the most to a lower score for Social/Community impacts. The alternative with the fewest number of business relocations contributed to a higher score. **Table 3.28** summarizes the number of business relocations for each alternative. The No Build Alternative has no impacts. Alternatives 2D and 1C would also not require any business relocations. Therefore, for this factor, the No Build Alternative and Alternatives 2D and 1C, ranked the best. However, Alternative 2A also ranked high because it would require one business relocation. Alternatives 1F and 6B would have the greatest impact because each would require 14 business relocations. Alternative 6A would have a relatively high degree of impact and thus ranked lower in the consideration of this factor.

Table 3.28 Business Relocations

No Build	2A	2D	1C	1F	6B	6A
0	1	0	0	14	14	12

Criterion 2, Factor 5: How many impacted receptors cannot be benefited by a noise wall?

Noise abatement measures (noise walls) were evaluated for noise receptors that would be impacted as a result of the project. Where it was determined that a noise wall could not provide at least a 5-decibel noise reduction, or that a noise wall was not otherwise reasonable and feasible, the impacted receptors were identified as non-benefited, impacted receptors. That is, they would remain impacted (by noise) after the

project was built (Table 3.29). The No Build Alternative would not be applicable for this factor because noise abatement is only considered for build alternatives. Alternative 6A would have the highest number of receptors (22) that would remain impacted with the project. With Alternative 1C, all of the impacted receptors could be benefited by a noise wall (none would remain impacted). Alternative 1C also would have the fewest number of impacted receptors. The ranking of each alternative in the overall scoring of this factor is commensurate with the number of receptors that would remain impacted.

Table 3.29 Number of Impacted Receptors Not Benefited with a Noise Barrier

Noise	No Build	2A	2D	1C	1F	6B	6A
Impacted Receptors	N/A	33	39	10	51	44	42
Impacted Receptors Benefited with Noise Barrier	N/A	29	30	10	42	34	20
Impacted Receptors Not Benefited with Noise Barrier	N/A	4	9	0	9	10	22
Non-Benefited Receptors - Current Analysis ¹	NA	4	15	0	11	12	24

¹This factor was originally evaluated based on the results from a noise study analysis that has subsequently been reevaluated to address new FHWA noise criteria. The current noise analysis [Section 5.3.4 (Noise)] yields slightly different numbers of non-benefited receptors. Alternatives 2D and 6A are worse than previously analyzed in terms of the number of non-benefited receptors. This would not affect the overall ranking for Criterion 2.

Criterion 2, Factor 6: What visual impacts will result from the alternative?

Visual impacts were evaluated from the standpoints of both the view of the bridge by the users of the NFSLR, and the view of the roadway and bridge by the residents in the project area. From the standpoint of the river users, the NFSLR has a meandering nature within the project area with a shoreline of natural vegetation. Therefore, a new bridge would not be visible for long distances and would be similar to the existing Port St. Lucie Boulevard and Prima Vista Boulevard bridges. The degree of visual impact would vary with each alternative and would depend on the vantage point of the boater at any particular location. However, a segment of the NFSLR would run parallel and very close to Alternative 6A. It appears that a boater using this river segment would sustain a greater chance of viewing the new bridge than the other alternatives. This parallel segment would also be close enough to the bridge to receive higher noise levels.

From the standpoint of the view of the roadway and bridge by the residents, the following considerations were taken into account:

- For all build alternatives, visual impacts would be the greatest where the new roadway deviates from an existing route and/or a new roadway or changed traffic patterns are introduced into a neighborhood;
- The No Build Alternative would not change the existing visual character of the project area. However, the continued view of congested traffic conditions could be considered a visual impact;
- Visual impacts would occur with Alternative 2A along its diagonal segment east of Manth Lane. Impacts would also occur to the community on the east side of the NFSLR;
- Alternative 2D would also affect the community east of NFSLR. Although it follows existing roadway alignments of West Virginia Drive, Walters Terrace, and Veterans Memorial Parkway, the community between West Virginia Drive and Walters Terrace, east of Floresta Drive, would be looking at two "Parkways" to their west and south as the alternative makes its S-curve;

- Alternative 1C would use existing West Virginia Drive and would not affect any residential communities to the east. For these reasons, this alternative was considered to have the least visual impact;
- Alternative 1F would be the same as Alternative 1C on the west side of the NFSLR, but it would have a substantial visual impact to the La Buona Vita community on the east side of the NFSLR;
- Alternative 6B would have the same impacts to La Buona Vita as Alternative 1F. It also traverses diagonally through a neighborhood on the west side of the NFSLR; and
- Alternative 6A has a substantial visual impact west of the NFSLR due to the introduction of a half-mile diagonal cut through an established neighborhood. It would also have substantial impacts to the north side of the La Buona Vita community.

Criterion 2, Factor 7: Consideration of agency comments.

No agency comments were received regarding social and community impacts.

Criterion 2, Factor 8: Consideration of public comments.

Where the public commented on social and community impacts, the public had a preference for Alternative 1C because it resulted in fewer residential relocations and less disruption to neighborhoods. They also commented that Alternatives 2A and 2D would present safety concerns to children, particularly in the area of Floresta Elementary School.

Social/Community Impacts Scoring Rationale (0 - 10 points)

The scoring results for the Social/Community Impacts criterion are shown in **Table 3.30**. The following is a summary of the considerations used to score the Social/Community Impacts criterion:

- The No Build Alternative received the highest score since it would have the least community impacts.
- Alternative 1C received the next highest score. It would have the least number of relocations, the least community cohesion and mobility impacts, and the least noise and visual impacts.
- Alternative 2A would have greater impacts to the community than 1C on both the east and west sides of the NFSLR.
- Alternative 1F does not score as high as Alternative 2A because of its impacts to La Buona Vita. However, it scored better than 2D, 6B, and 6A because of fewer impacts west of the NFSLR.
- Alternatives 2D, 6B, and 6A scored the lowest, primarily due to greater community cohesion/mobility impacts and/or relocation impacts, as well as greater noise and visual impacts.

Table 3.30 Social/Community Impacts Score

No Build	2A	2D	1C	1F	6B	6A
10	5	3	7	4	3	3

3.3.1.1.3 Criterion 3 – Natural Environment Impacts

Six factors were considered for scoring each alternative as it affected the natural environment, including the potential gross and net impacts on wetlands, upland habitats, Essential Fish Habitat (EFH), and federal-

and state-listed species. Agency and public comments on each alternative were also considered. The first two factors were considered to be more important in the evaluation.

- Factor 1** What are the net wetland impacts from the alternative after compensatory mitigation?
- Factor 2** What are the impacts to federal- and state-listed species and Essential Fish Habitat (EFH)?
- Factor 3** What are the gross wetland impacts from the alternative?
- Factor 4** What are the impacts to uplands from the alternative?
- Factor 5** Consideration of agency comments.
- Factor 6** Consideration of public comments.

Criterion 3, Factor 1: What are the net wetland impacts from the alternative after compensatory mitigation?

Although the net wetland impact after compensatory mitigation is one of the important factors, it is appropriate to first discuss the gross impacts. Net wetland impacts are discussed later in this Section [*Criterion 3, Factor 1 (Continued)*] after the consideration of the other factors.

Criterion 3, Factor 2: What are the impacts to federal- and state-listed species and Essential Fish Habitat?

Impacts to federal- and state-listed species¹⁹

Even though the alternatives affect different habitats, based on the evaluation contained in the *Endangered Species Biological Assessment Report*, all build alternatives would have similar implications for federal- and state-listed species (**Table 3.31**). For example, all build alternatives are located within the core foraging area (CFA) of documented nesting colonies of wood storks. The potential to affect the species is similar for all build alternatives and it is anticipated that none of the build alternatives would adversely affect the species. Thus, all build alternatives would have a similar effect on federal- and state-listed species and are distinguished only from the No Build Alternative.

Table 3.31 Impact Assessment for Each Build Alternative for Listed Species

No Build	2A	2D	1C	1F	6B	6A
No Impacts	All build alternatives have similar impacts for federal- and state-listed species					

Impacts to Essential Fish Habitat (EFH)

For all build alternatives, direct impacts to EFH would include placement of fill for the bridge approaches and portions of right of way to be acquired, placement of fill at the locations of bridge pilings, shading under the bridge, and construction and excavation of stormwater pond sites (**Table 3.32**). Based on the EFH assessment, impacts to all managed fisheries species are expected to be similar for all build alternatives. In other words, all build alternatives would have a similar effect on EFH and are distinguished only from the No Build Alternative.

¹⁹ Following the selection of the Preferred Alternative, additional avoidance and minimization measures were incorporated and are described in Section 7.1.1 (Additional Avoidance and Minimization Measures for the Preferred Alternative). Thus, the area of impact will be different than those shown in this section.

**Table 3.32 Impact Assessment (acres) for Each Build Alternative
for EFH (same as wetlands and SSL)**

No Build	2A	2D	1C	1F	6B	6A
0	9.97	9.97	11.95	10.25	9.40	8.56
No impacts	All build alternatives have similar impacts for EFH species					

Criterion 3, Factors 3 and 4: What are the gross wetland impacts from the alternative? What are the impacts to uplands from the alternative?

For all build alternatives, direct impacts to wetlands and uplands would include placement of fill for the bridge approaches and portions of right of way to be acquired, placement of fill at the locations of bridge pilings, shading under the bridge, and construction and excavation of stormwater pond sites. The area within the right of way under the bridge was considered a direct impact (due to shading) and consists of approximately 70-80 percent of the quantified wetland and upland impact (in acres; **Table 3.33**).²⁰ Thus, the acres of gross impacts represent a “worst case” scenario for potential impacts when the actual impacts would likely be less. For SSL, the quantified impacts are nearly all due to shading; less than 1 percent to 6 percent (Alternatives 2A and 2D) would be due to the placement of piers or other structures.

Table 3.33 Summary of the Direct Impacts for Each Build Alternative (acres)

	No Build	2A	2D	1C	1F	6B	6A
Wetlands	0	7.7	7.7	10.2	9.1	7.6	7.8
Uplands	0	7.6	7.6	6.5	3.0	1.8	0.2
Sovereignty Submerged Lands (SSL)	0	2.3	2.3	1.8	1.2	1.8	0.8
Total	0	17.6	17.6	18.5	13.3	11.2	8.8

Alternative 1C would have the greatest amount of direct impact on wetlands (10.2 acres) followed by Alternative 1F (9.1 acres). Alternatives 6B, 2A, 2D, and 6A have approximately the same acreage of direct impacts with 7.6, 7.7, 7.7, and 7.8 acres, respectively. Alternatives 2A and 2D have identical effects because they use the same alignment to cross the NFSLR.

For upland habitats, Alternatives 2A and 2D, which have the same alignment within upland habitats, would have the most impact on uplands with 7.6 acres of direct fill impacts, followed by Alternative 1C with 6.5 acres of impact. Alternatives 1F and 6B have a lesser amount of upland impacts with 3.0 and 1.8 acres, respectively. Alternative 6A has the least amount of direct impacts to uplands (0.2 acres).

The types of impacts within the water column of the NFSLR (SSL) would be due to the placement of pilings or other structural supports. Impacts would also result from shading and are included as a direct impact. Of the build alternatives, Alternative 6A would have the least impact on SSL while Alternatives 2A and 2D would have the most total impacts (2.3 acres). Alternatives 1C, 1F, and 6B would impact 1.8, 1.2, and 1.8 acres, respectively.

²⁰ Functional losses for wetlands were calculated using the Uniform Mitigation Assessment Method (UMAM) for direct and indirect impacts for each build alternative. UMAM is not (usually) used for upland areas and is used for Sovereignty Submerged Lands (SSL) only when seagrasses are present. To fairly compare the potential impacts to all resource categories, the analysis includes only the direct impacts (in acres).

If the total amount of impact (in acres) is considered, Alternatives 2A, 2D, and 1C would have the most impact (in acres). Alternative 6A has the least impact and Alternatives 1F and 6B would have moderate amounts of impact.

Criterion 3, Factor 1 (Continued): What are the net wetland impacts after compensatory mitigation from the alternative?

Throughout the project development process it has been the intent of the City to mitigate the impacts of any build alternative through a sequence of avoidance, minimization, and then compensation for unavoidable impacts. Despite these avoidance and minimization measures, it is anticipated that all build alternatives would result in some unavoidable wetland and associated upland impacts (direct, indirect, and temporary). Mitigation required under federal and state regulations is usually determined after an alternative is selected (during the detailed design phase and the permitting process) when more specific impacts are known. However, a comprehensive mitigation plan has been proposed by the City to compensate for unavoidable impacts to wetlands, uplands, listed species habitats, Section 4(f) resources, SSL, EFH, recreational resources, and water quality. The mitigation plan is the same for all build alternatives and would be implemented only if one of the build alternatives is selected. The mitigation plan would not be implemented if the No Build Alternative is selected.

Three types of compensatory mitigation have been identified for natural habitats:

- The first type would be for impacts to state-owned lands. Uplands are also protected under City code and as habitat for endangered species under federal and state regulations.
- The second type of mitigation would be for direct and indirect impacts to wetlands, SSL, and navigable and non-navigable waters as required under federal and state regulations.
- The third type would be mitigation for anticipated mangrove losses.

It is anticipated that, with the entire mitigation program, any unavoidable impacts related to any build alternative can be compensated in a manner that would result in no overall net loss to wetlands, EFH, Section 4(f) resources, or protected species or their habitats.

The reason that it is anticipated that there would be no net loss to wetlands, EFH, Section 4(f) resources, or protected species or their habitats is the nature of the mitigation plan. All build alternatives would have direct impacts (due to various fill operations) on natural habitats or would have indirect impacts (e.g., habitat fragmentation, potential to introduce invasive species, increased noise). Thus, the selection of any build alternative would have the potential to decrease the amount and quality of the existing habitats in the project area. The proposed mitigation plan [Section 7.3 (Compensatory Mitigation for Unavoidable Impacts)] was developed to compensate for these impacts and to obtain approval from the Governor and the Cabinet acting as the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida for an easement to cross state-owned lands. Under current federal and state regulations, a mitigation plan would be required to restore or enhance conditions to at least the same conditions as those without the project. However, in this case, because of the presence of state-owned lands, the mitigation plan was designed to compensate over and above what would normally be required for a project of this type. Thus, it is anticipated that the proposed compensatory mitigation plan would substantially improve the quality of the natural habitats over current conditions and would increase the acreage of state-owned lands within the SPSP.

Criterion 3, Factors 5 and 6: Consideration of agency and public comments.

Throughout the PD&E process, and particularly through the ETDM Programming Screen, all cooperating agencies have encouraged measures to avoid and/or minimize impacts to natural habitats. All agencies have expressed their preference for Alternative 6A. Their preference was based on their concerns over impacts to state-owned lands. Substantive natural resource issues among the build alternatives were not raised.

Very few comments were received from the public that discussed specific environmental impacts. Those that were received expressed a preference for the No Build Alternative and an aversion to Alternative 1C.

Natural Environment Impacts Scoring Rationale (0-10 points)

The first two factors (net impacts after compensatory mitigation and impacts to listed species) were considered to be the most important criteria in the scoring of the alternatives. If the gross impacts are examined alone, all build alternatives would have varying impacts on the natural environment while the No Build Alternative would have no impacts. However, if the mitigation plan is considered, any of the build alternatives could be scored more favorably than the No Build Alternative because the mitigation plan would be implemented only if one of the build alternatives is selected. The mitigation plan is the same for all build alternatives and substantially overcompensates for impacts so that all build alternatives are essentially equivalent for this factor and could be scored the same. Similarly, all build alternatives would have a similar effect on federal- and state-listed species and are distinguished only from the No Build Alternative. Thus, the two most important factors to be considered in the scoring of the alternatives can only distinguish between the No Build Alternative and all build alternatives. The other factors must be used to elucidate differences among the build alternatives. The rationale in the scoring of alternatives is summarized as follows:

- Without the compensatory mitigation plan, the No Build Alternative could receive the highest score (10) because it would have no impacts. However, the No Build Alternative would not have the net positive benefits of the mitigation plan. Thus, it would not be reasonable for the No Build Alternative to receive the highest score and a score must still be determined for the build alternatives. The remaining factors need to distinguish the differences.
- Because of the substantial net positive benefits of the mitigation plan, the differences among the build alternatives due to direct and indirect impacts become less discernible. In other words, if the mitigation plan is considered (which is consistent with NEPA), the No Build Alternative could receive a score of 0 and each build alternative could receive a score of 10. However, the gross impact acreages of each alternative (without the mitigation plan) and the habitat quality (based on field observations) are different among the build alternatives.
- Alternative 6A would have the least total amount of gross impact (in acres) and would impact the lowest quality habitat compared to the other build alternatives. With the mitigation plan, there would be more "lift"²¹ if this alternative were selected. Some consideration is also given to the agencies' preference for this alternative. Thus, Alternative 6A received the highest score of 10.
- Alternatives 1F and 6B would have more total impact to natural habitat (compared to Alternative 6A) so there would be a lesser amount of lift. They both received a score of 9.

²¹ "Lift" is a term used to estimate the relative gain of a proposed mitigation plan over existing conditions.

- Alternatives 2A, 2D, and 1C would have the highest amount of impact acres and would impact the highest quality habitat compared to the other build alternatives. They would have a lesser amount of lift and all three alternatives receive a score of 8. It is important to note that while these alternatives would result in the “highest” acreage impacts, the relative difference is small when evaluated from a watershed perspective.
- Finally, the No Build Alternative would normally receive the highest score of 10 because it has no impacts. However, the selection of this alternative would not receive any of the substantial net positive benefits from the mitigation plan so that its score could be 0. Because it is being compared to a mitigation plan that overcompensates for potential impacts, it received a score of 5 (midway between 0 and 10).

Based on this evaluation, the scoring results for the Natural Environment Impacts criterion are shown in Table 3.34.

Table 3.34 Natural Environment Impacts Score

No Build	2A	2D	1C	1F	6B	6A
5	8	8	8	9	9	10

3.3.1.1.4 Criterion 4 – Physical Impacts

Six factors were considered in determining the score for this criterion.

- Factor 1** What are the air quality impacts from the alternative?
- Factor 2** What are the water quality impacts from the alternative?
- Factor 3** What are the floodplain impacts from the alternative?
- Factor 4** What are the contamination risks from the alternative?
- Factor 5** Consideration of agency comments.
- Factor 6** Consideration of public comments.

Criterion 4, Factor 1: What are the air quality impacts from the alternative?

- All build alternatives would meet the maximum air quality standards established by the USEPA;
- All build alternatives are expected to result in improved local air quality due to reduction in traffic congestion; and
- The No Build Alternative could have negative air quality impacts due to the continued and increased amount of congestion and stop-and-go traffic.

Criterion 4, Factor 2: What are the water quality impacts from the alternative?

- Impacts would be negligible for all build alternatives due to the following measures:
 - Strict adherence to state and regional regulatory criteria;
 - 150 percent pretreatment of stormwater runoff prior to discharge; and
 - Mitigation Plan to improve water quality.
- The No Build Alternative would not have the benefit of the water quality improvements associated with the build alternatives’ mitigation plan.

Criterion 4, Factor 3: What are the floodplain impacts from the alternative?

- Alternative 1C is the only alternative that would have a small impact to the floodplain on the east side of the NFSLR; however, this would be mitigated with Platt's Creek; and
- The floodplain analysis concluded that floodplain impacts among the six build alternatives would be similar and negligible [Section 5.3.11 – (Floodplains)].

Criterion 4, Factor 4: What are the contamination risks from the alternative?

- There are no known contamination sites within the proposed right of way for any of the build alternatives; and
- There is no evidence of contamination that would prevent construction of any alternative or impact the schedule or cost of the project.

Criterion 4, Factors 5 and 6: Consideration of agency and public comments.

No substantive agency and public comments were received.

Physical Impacts Scoring Rationale (0-5 points)

The scoring results for the Physical Impacts criterion are shown in **Table 3.35**. The analysis concluded that there were no appreciable impacts among any of the build alternatives for this criterion. Although there were some differences, the analysis concluded there were no major differences that would cause a difference in scores among the alternatives. The following is a summary of the considerations used to score the Physical Impacts criterion:

- There would be no significant impacts with any of the build alternatives;
- There are no discriminating differences among build alternatives;
- The No Build Alternative would not have the benefit of the water quality improvements associated with the mitigation package; and
- The No Build Alternative would have a potential negative effect on air quality due to continued traffic congestion.

Table 3.35 Physical Impacts Score

No Build	2A	2D	1C	1F	6B	6A
4	5	5	5	5	5	5

3.3.1.1.5 Criterion 5 – Project Cost (0-5 points)

This criterion was given a score between 0 and 5. The capital costs for the project have been planned for and are budgeted in the local and regional transportation plans. Therefore it is not a primary discerning criterion for alternative selection. It is understood that there would be costs to the community associated with the No Build Alternative such as the time spent in traffic congestion and perhaps the capital costs necessary to improve other area roadways if no project is built. However, the analysis for this criterion was strictly related to the capital cost of this project including, including design, right of way, construction, construction engineering inspection, mitigation, and utility relocations.

The Project Cost score is summarized in **Table 3.36**. The No Build Alternative received the maximum number of points since there would be no capital cost for the proposed project. To address the relative cost difference among alternatives, the lowest cost build alternative received 4 points and each of the remaining build alternatives would be discounted based on their relative cost compared to the lowest cost build alternative. For example, if the second lowest cost build alternative is 20 percent higher than the lowest cost build alternative, then 20 percent would be multiplied by 4 (equaling 0.8). Then the second lowest cost build alternative would receive (4 – 0.8) points which is 3.2. The score would then be rounded to the nearest whole number, in this example 3.

Table 3.36 Project Cost Score (\$ millions)

No Build	2A	2D	1C	1F	6B	6A
\$0	\$160	\$168	\$162	\$129	\$119	\$126
5	3	2	3	4	4	4

3.3.1.2 Summary of Alternative Evaluation

The consultant team scoring for each criterion is presented in **Table 3.37**. Alternative 1C scored the highest with 43 out of 50 points. The lowest scoring build alternative was Alternative 2D and the lowest scoring alternative overall was the No Build Alternative.

Table 3.37 Consultant Team LPA Scoring (November 14, 2011)

Criteria	Alternatives						
	No Build	2A	2D	1C	1F	6B	6A
1 – Meeting Project Purpose and Need (0 – 20 pts)	0	15	13	20	13	13	15
2 – Social/Community Impacts (0 – 10 pts)	10	5	3	7	4	3	3
3 – Natural Environment Impacts (0 – 10 pts)	5	8	8	8	9	9	10
4 – Physical Impacts (0 – 5 pts)	4	5	5	5	5	5	5
5 – Project Cost (0 – 5 pts)	5	3	2	3	4	4	4
Totals	24	36	31	43	35	34	37

As part of the LPA selection process, a panel made up of representatives from the City, FDOT, and the St. Lucie County Transportation Planning Organization (TPO) was convened on November 17, 2011 to score the alternatives. All but one member of the panel attended a field review of the river crossing alternatives on November 16, 2011.

The consultant team presented the criteria and the scoring evaluation from the November 14, 2011 session to the panel as summarized above. The consultant team provided the panel with a detailed review of the project information, the results of the scoring, and answered questions. The panel used the same criteria as the consultant team, but the panel did not assign the maximum number of points to the highest performing alternative for two of the criteria. The following instructions were provided to panel members:

- Panel will review consultant team scoring for each criterion.
- Discuss criteria and consultant team scoring as a starting point.
- Does the panel agree (consensus) with consultant team scoring?
 - If yes, note on scoring sheet and move to next criterion.
 - If no, then individually score the alternatives for the criterion on the scoring sheet.

- After all five criteria are ranked, sign and hand in score sheets.
- Panel scores will be averaged and recorded on the master score sheet for each criterion.
- The average scores for each criterion will be totaled for an overall score for each alternative.
- LPA selection will be made by consensus of the panel, consultant team, and FHWA.

The panel then completed its independent scoring. The results of the panel's scoring are presented in **Table 3.38**. Alternative 1C scored the highest with 39 out of 50 points. The lowest scoring build alternative was Alternative 2D. The lowest scoring alternative overall was the No Build Alternative.

Table 3.38 City-FDOT-TPO Panel LPA Scoring (November 17, 2011)

Criteria	Alternatives						
	No Build	2A	2D	1C	1F	6B	6A
1 – Meeting Project Purpose and Need (0 – 20 pts)	0	15	13	17	13	13	14
2 – Social/Community Impacts (0 – 10 pts)	8	4	2	7	4	3	3
3 – Natural Environment Impacts (0 – 10 pts)	5	8	8	7	9	9	10
4 – Physical Impacts (0 – 5 pts)	4	5	5	5	5	5	5
5 – Project Cost (0 – 5 pts)	5	3	2	3	4	4	4
Totals	22	35	30	39	35	34	36

While there was a difference in the number of points for some criteria and the final score for the build alternatives, the relative ranking of the alternatives was generally the same for the consultant team and the panel (**Table 3.39**). Of the build alternatives, both groups scored/ranked Alternative 1C the highest and Alternative 2D the lowest. The lowest scoring/ranking alternative overall was the No Build Alternative.

Table 3.39 Comparison of the Consultant Team and Panel LPA Scoring

Criteria	Alternatives						
	No Build	2A	2D	1C	1F	6B	6A
Consultant Team Score	24	36	31	43	35	34	37
Consultant Team Ranking	7	3	6	1	4	5	2
Panel Score	22	35	30	39	35	34	36
Panel Ranking	7	3	6	1	3	5	2
Average Score	23.0	35.5	30.5	41.0	35.0	34.0	36.5
Rank	7	3	6	1	4	5	2

After several weeks²² of discussion and coordination to develop an evaluation process for the selection of a an LPA, on November 17, 2011, senior management and staff from the City, the FDOT, and the TPO

²² The LPA process followed this schedule:

- Draft LPA evaluation process and criteria developed (August 2011) and approved by the City (8/25/11);
- A scoring and weighting system for the criteria was developed (September 2011);
- Draft LPA process, criteria, and scoring system discussed with FDOT and City (10/6/11);
- Conference call with FDOT and FHWA to discuss draft LPA criteria and scoring system (10/26/11);
- Conference call with FHWA headquarters and Atlanta offices to discuss draft LPA criteria and scoring system (11/2/11);
- Preliminary scoring of alternatives by City's consultant, based on DEIS data, agency review comments, and Public Hearing feedback (11/14/11);
- City discussion of consultant's preliminary LPA scoring (11/16/11);
- City, FDOT, and FHWA field review of build alternatives (11/16/11);
- Review of preliminary LPA scoring; attended by FHWA (11/17/11).

agreed upon an LPA for extending the existing Crosstown Parkway and selected Alternative 1C as the LPA. This decision was based on:

- Information in the Crosstown Parkway Extension DEIS (Notice of Availability published in the *Federal Register* on August 19, 2011);
- An evaluation process and criteria developed by the City in coordination with FDOT and FHWA;
- Agency and public comments; and
- Professional judgment (through the City's EIS consultant's evaluation of the LPA).

After scoring was completed, the LPA was evaluated for its compliance with Section 4(f) of the Department of Transportation Act. While not part of the scoring process, Section 4(f) remains an important part of the decision-making process. This federal law is a process separate from the PD&E (NEPA) process. The FHWA determined through a Determination of Section 4(f) Applicability (DOA) that the provisions of Section 4(f) applied to the AP, the SPSP, and Kiwanis Park. The proposed rights of way of all six build alternatives under consideration are located within the boundaries of one or more of these Section 4(f) properties. The evaluation is presented in Section 6.0 (Section 4(f) Evaluation). The results of the evaluation are summarized in Section 3.3.2.2.2 (Use of Section 4(f) Resources).

As a final screening, the panel considered public sentiment for the various alternatives. Based on the Public Kickoff Meeting, the Alternatives Public Workshop, and the September 22, 2011 Public Hearing, of those citizens that expressed a preference for an alternative, most supported Alternative 1C [Table 3.40; Section 8.0 (Comments and Coordination)].

Table 3.40 Public Preferences for a Specific Alternative Expressed at Public Meetings

Public Forum	Alternative						
	No Build	2A	2D	1C	1F	6B	6A
Public Kickoff Meeting	2	4	0	11	2	0	3
Alternatives Public Workshop	7	1	0	28	0	0	0
Public Hearing	6	9	0	115	0	2	2
Total	15	14	0	154	2	2	5

3.3.1.3 Final Selection of a Preferred Alternative

On January 23, 2012, the Port St. Lucie City Council adopted Alternative 1C as the LPA for the extension of the Crosstown Parkway from Manth Lane to U.S. 1 (Resolution 12-R18; **Appendix E**). The FHWA concurred with the selection process and the identification of Alternative 1C as the Preferred Alternative in a letter dated July 30, 2012 (**Appendix A**). Alternative 1C is the Preferred Alternative based on its ability to fulfill the project purpose and need while minimizing environmental impacts and costs. The impacts and considerations associated specifically with Alternative 1C are summarized in Section 5.0 (Environmental Consequences), which details the scientific and analytical basis for comparing the direct and indirect impacts of the alternatives. Section 5.0 also includes a description of all environmental impacts associated with the Preferred Alternative and a statement of findings on all relevant impact categories.

3.3.2 Description of the Preferred Alternative

Alternative 1C travels along the existing West Virginia Drive roadway alignment then crosses the SPSP and the NFSLR, bending slightly southward to its eventual terminus with U.S. 1 and its intersection with Village Green Drive (**Figure 3.72**). This connection at the eastern terminus would create the fourth leg at this existing intersection. Signalization would be required at the existing West Virginia Drive and Floresta Drive 2-way stop control intersection. The concept plans depicting the Preferred Alternative are contained in **Appendix H**. The utilities for the Preferred Alternative are depicted on the Alternative 1C concept plans included in the Utility Assessment Package for the EIS.

3.3.2.1 Roadway Typical Section (Preferred Alternative)

The typical section for the Preferred Alternative west of the NFSLR is a suburban cross section consisting of three 12-foot travel lanes and a 14-foot outside shoulder, including a 5-foot paved designated bicycle lane in each direction. Travel lanes are separated by a 32-foot raised landscaped median. The right of way width for the typical section is 330 feet to the west bridge approach. Consistent with the Crosstown Parkway to the west, a wide area of green space with a pedestrian pathway will be constructed on both sides of the parkway within the right of way (**Figure 3.73**). Between Floresta Drive and the west approach to the NFSLR, the roadway cross section will transition to an urban section to match the bridge cross section.

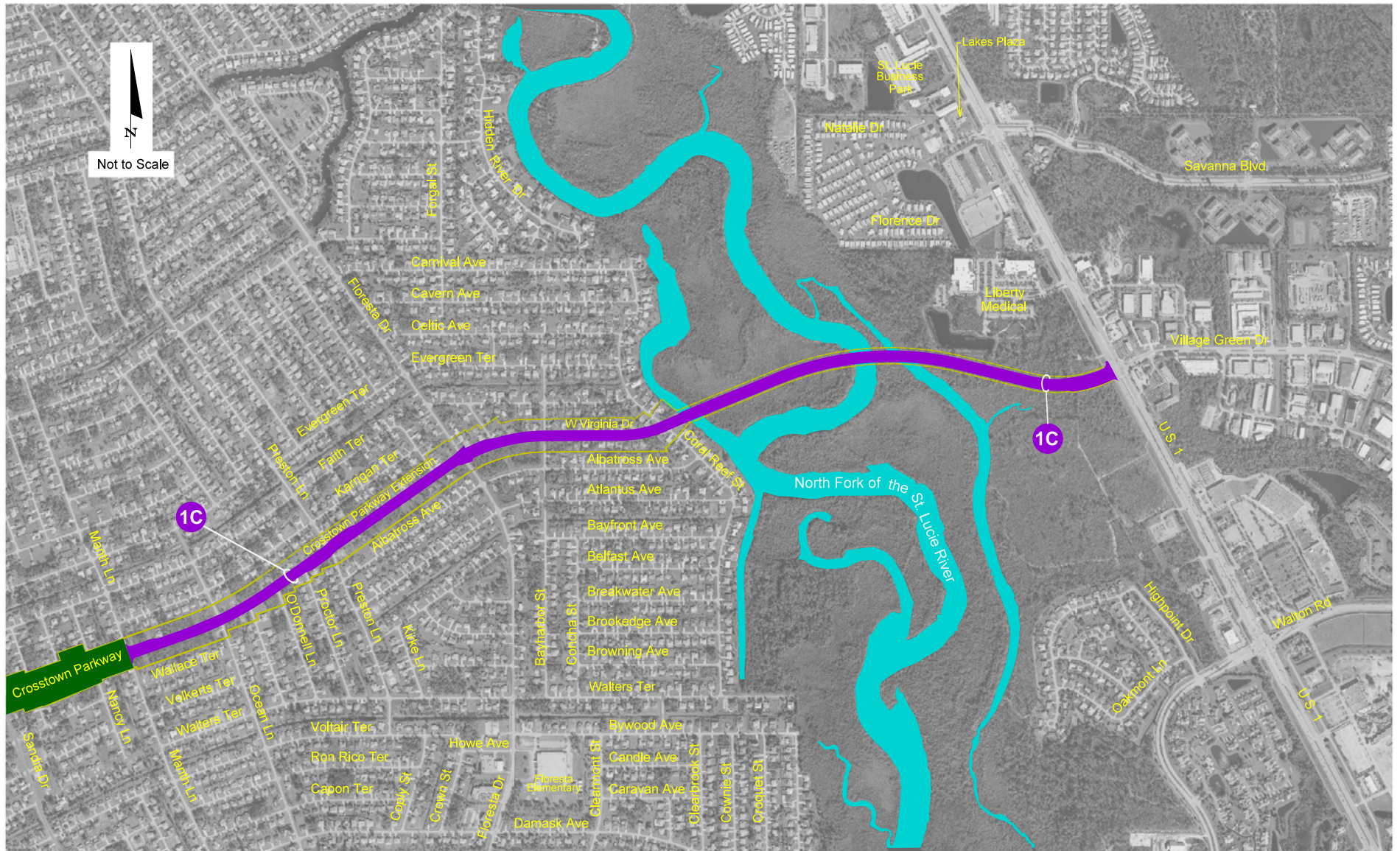
East of the NFSLR, the proposed typical section consists of an urban 6-lane cross section with three 12-foot travel lanes and a 5-foot designated bicycle lane in each direction separated by a 30-foot raised grassed median. The right of way width for this typical section is 144 feet (**Figure 3.74**).

3.3.2.2 Bridge Typical Section (Preferred Alternative)

The bridge typical section developed for the project consists of twin parallel structures, each consisting of three 12-foot lanes, a 1-foot 6½-inch inside traffic barrier, a 1-foot 6-inch outside traffic barrier between the outside shoulder and sidewalk, an 8-foot inside shoulder, a 10-foot outside shoulder, and an 8-foot sidewalk with a 1-foot pedestrian railing. A 10-foot 11-inch gap between the two structures was included to allow inspection of the underdeck and superstructure using a truck-mounted mechanical arm platform.

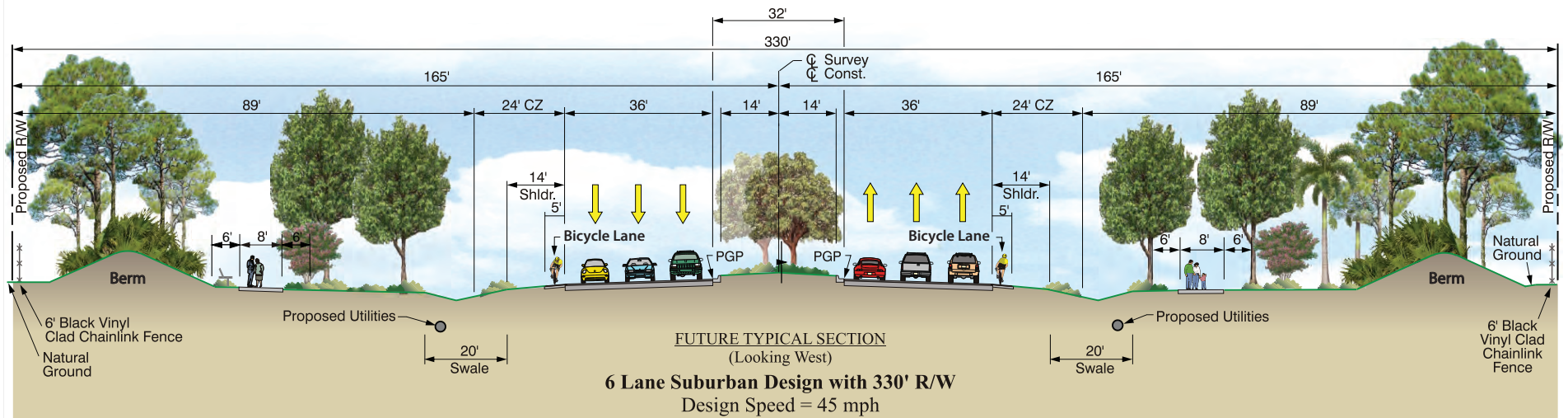
3.3.2.2.1 Impact Avoidance and Minimization of the Bridge Width

After selection of the Preferred Alternative (Section 3.3.1), coordination continued with NMFS, USFWS, and USACE regarding project impacts and mitigation [Section 8.6.3 (Agency Coordination and Concurrences After Public Hearing)]. Through this coordination effort, the bridge typical section was reduced to approximately 103 feet (102' 8"). This was done through a combination of virtually eliminating the gap between the bridges, and reducing the widths of sidewalks, travel lanes and shoulder widths. The resulting typical section consists of twin structures with each structure comprised of two 11-foot travel lanes, one 12-foot outside travel lane, a 5-foot outside shoulder/bicycle lane, a 2-foot 6-inch inside shoulder, a 1-foot 6½-inch inside traffic barrier, a 1-foot 6-inch outside traffic barrier between the outside shoulder/bicycle lane and the sidewalk, a 6-foot sidewalk, and a 9½-inch pedestrian railing. A 2-inch gap remains between the structures. FDOT has confirmed that equipment is available that can reach underneath the reduced half-bridge width so that inspections could still be performed from the bridge as opposed to the ground.



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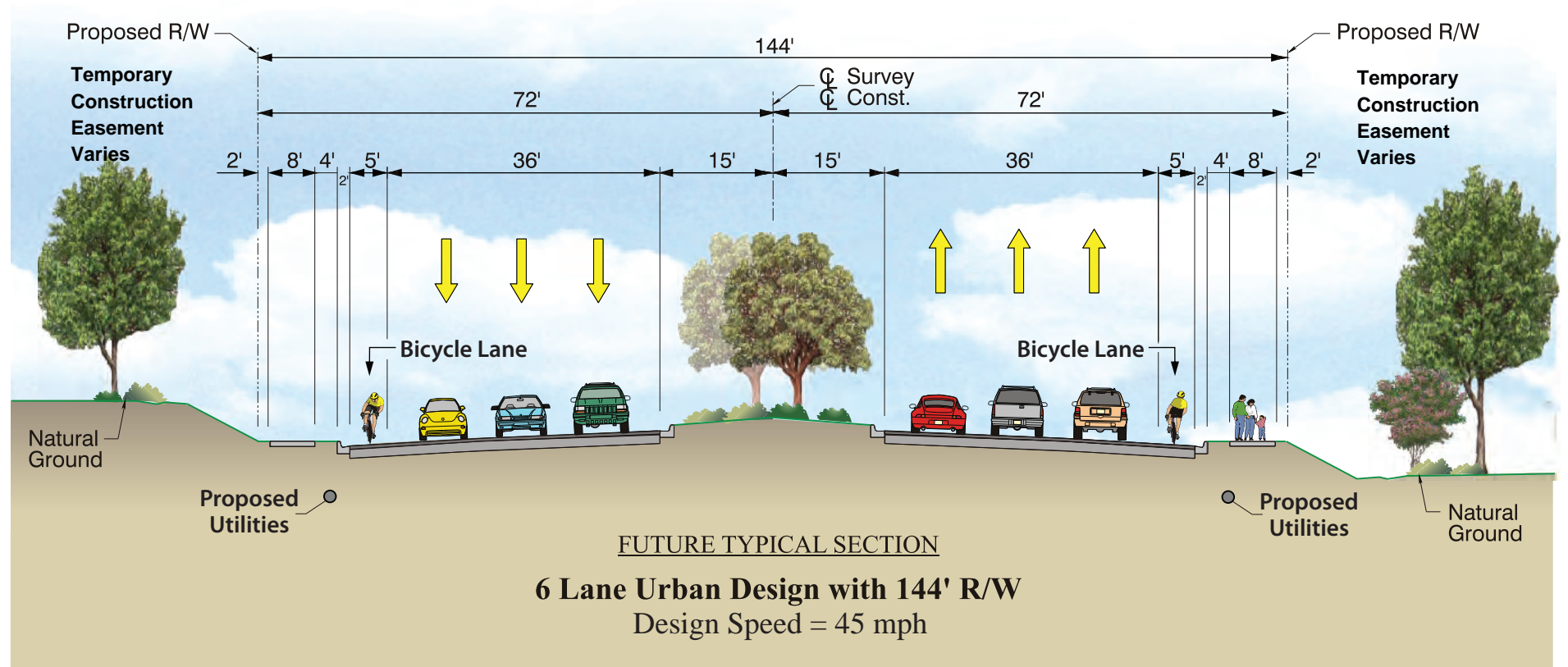
Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
Preferred Alternative
 Figure 3.72



NOTE: Typical section between Manth Lane to West of the River.

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ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
Environmental Impact Statement
Suburban Typical Section
Figure 3.73



NOTE: Typical section between East of the River to US-1.

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 ETDM No. 8247

Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
Urban Typical Section
 Figure 3.74

The objective was to develop a bridge typical section that meets minimum criteria while reducing shading impacts to a sensitive environment. There is no minimum requirement established for the offset to the barrier wall for bridges along urban sections. To establish the minimum width AASHTO²³ indicates that long bridges (in excess of 200 feet) should be at least 4 feet from the edge of traveled way on both sides of the roadway. Because this is a “should condition” the proposed shoulder width of 2 feet on the inside shoulder will not require a design exception. The following additional guidance from the FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (a.k.a. Florida Green Book)²⁴ was reviewed and considered in the development of the proposed shoulder width:

Chapter 3 Geometric Design; Section C.7.c. Shoulders addresses minimums for non curb and gutter sections, but does not specify a minimum shoulder width for multilane, divided curb and gutter sections.

Section C.7.j.4 Structures of the Florida Green Book states that the minimum width of bridges on urban streets shall be the curb-to-curb width of the approach roadway...When the bridge rail (barrier wall) is placed between the traffic and sidewalk, it should be offset a minimum of 2.5 feet from the edge of the travel lane, wide curb lane or bicycle lane. For long (500 feet or greater) bridges it is desirable to provide an offset distance that will accommodate a disabled vehicle.

The only minimum standard (indicated by the use of the word shall) for bridges on urban streets pertains to the width of the bridge being at least as wide as the curb to curb width of the approach roadway. Both approach roadways will transition to match up with the bridge width so this condition will be satisfied.

Based on this assessment, the bridge width meets the minimum design criteria. Further, the reduced bridge typical section minimized wetland impacts across the Aquatic Preserve. A comparison of the 143-foot original bridge typical section and the 103-foot final reduced bridge typical section is shown in **Figure 3.75**.

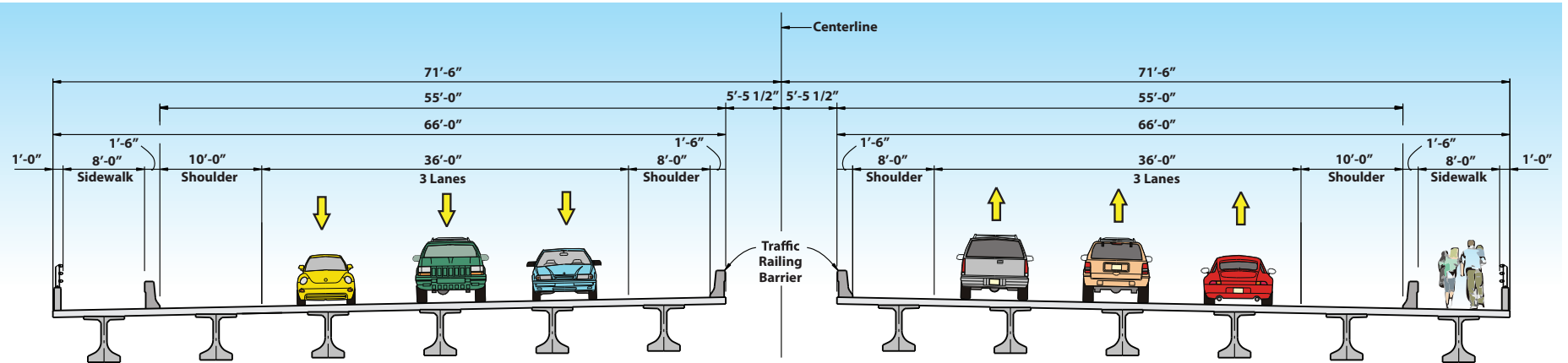
3.3.2.2.2 Use of Section 4(f) Resources

Three properties located within the project area are Section 4(f) properties: North Fork St. Lucie River Aquatic Preserve (AP), the Savannas Preserve State Park (SPSP), and Kiwanis Park. A Section 4(f) evaluation was conducted to determine whether a prudent and feasible alternative existed to avoid a use of these properties [Section 6.0 (Section 4(f) Evaluation)]. The analysis considered various bridging options, examined if the proposed action would have a constructive use, and evaluated measures to minimize harm.

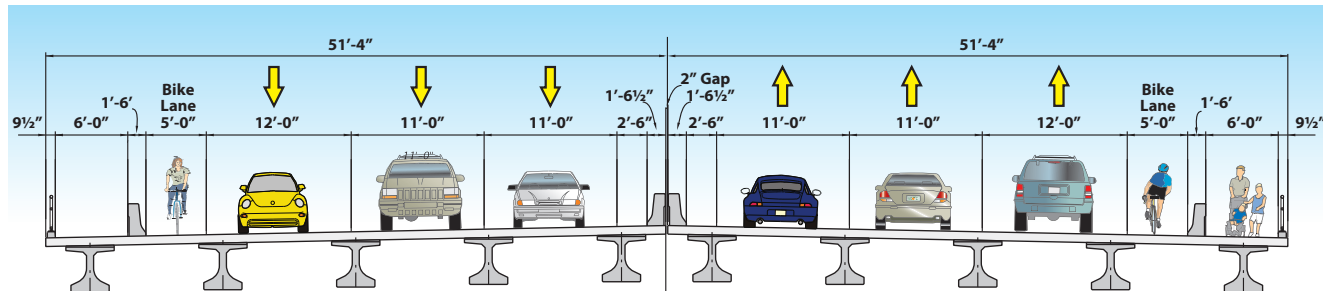
Based on the discussions contained in Section 6.2 (Avoidance Alternatives), Section 6.3 (Measures to Minimize Harm), Section 6.4 (Use of Section 4(f) Properties), and Section 6.6 (Evaluation of Alternatives), no feasible and prudent alternative exists to avoid a new crossing of the NFSLR. In addition, no feasible and prudent alternative exists to completely span the AP and the SPSP. Numerous bridging options were examined to bridge the AP and the SPSP. The bridging option with a pile bent substructure is the most

²³ A Policy on Geometric Design of Highways and Streets; Section 7.2.5 Structures

²⁴ This Manual is intended for use on all public roads that are not part of the State Highway System.



ORIGINAL TYPICAL BRIDGE SECTION
OVER NORTH FORK ST. LUCIE RIVER
MAIN CHANNEL SPAN



FINAL REDUCED BRIDGE TYPICAL SECTION
OVER NORTH FORK ST. LUCIE RIVER
MAIN CHANNEL SPAN

viable and least harmful option for crossing the AP and the SPSP. Thus, all build alternatives; including the Preferred Alternative, would use the AP and all build alternatives except Alternative 6A would use the SPSP (Alternative 6A is located north of the boundaries of the SPSP). Only Alternative 2D would use Kiwanis Park. Based on a least harm evaluation, Alternatives 2D, 1F, 6B, and 6A were eliminated from further consideration. Of the two remaining alternatives (2A and 1C), Alternative 1C would result in the least overall net harm. Thus, the Preferred Alternative will use a pile bent substructure with piers in the SPSP and piers in the AP, but will comply with the Coast Guard clearance requirements for North Coral Reef Waterway and the North Fork St. Lucie River (**Figure 3.76**).

3.3.2.3 Value Engineering

After selection of the Locally Preferred Alternative, a Value Engineering (VE) Study was conducted for this project. The study was sponsored by the FDOT, and facilitated by HDR Engineering, Inc. The VE study was conducted April 16-20, 2012. The VE Team was made up of 15 individuals from HDR, FDOT, the City, and Kimley-Horn & Associates (City Consultant), and Keith and Schnars (EIS Consultant) participated as a resource for the Team. As stated in the VE Report, the purpose of the study, through execution of the VE job plan, was to review and improve on various concepts for the project, with the primary objectives for this study identified as the following:

- Conducting a thorough review and analysis of the key project issues using a multidiscipline, cross-functional team;
- Reviewing and improving the proposed design by focusing on high cost items and specific areas; and
- Applying the principles and practices of the VE job plan.

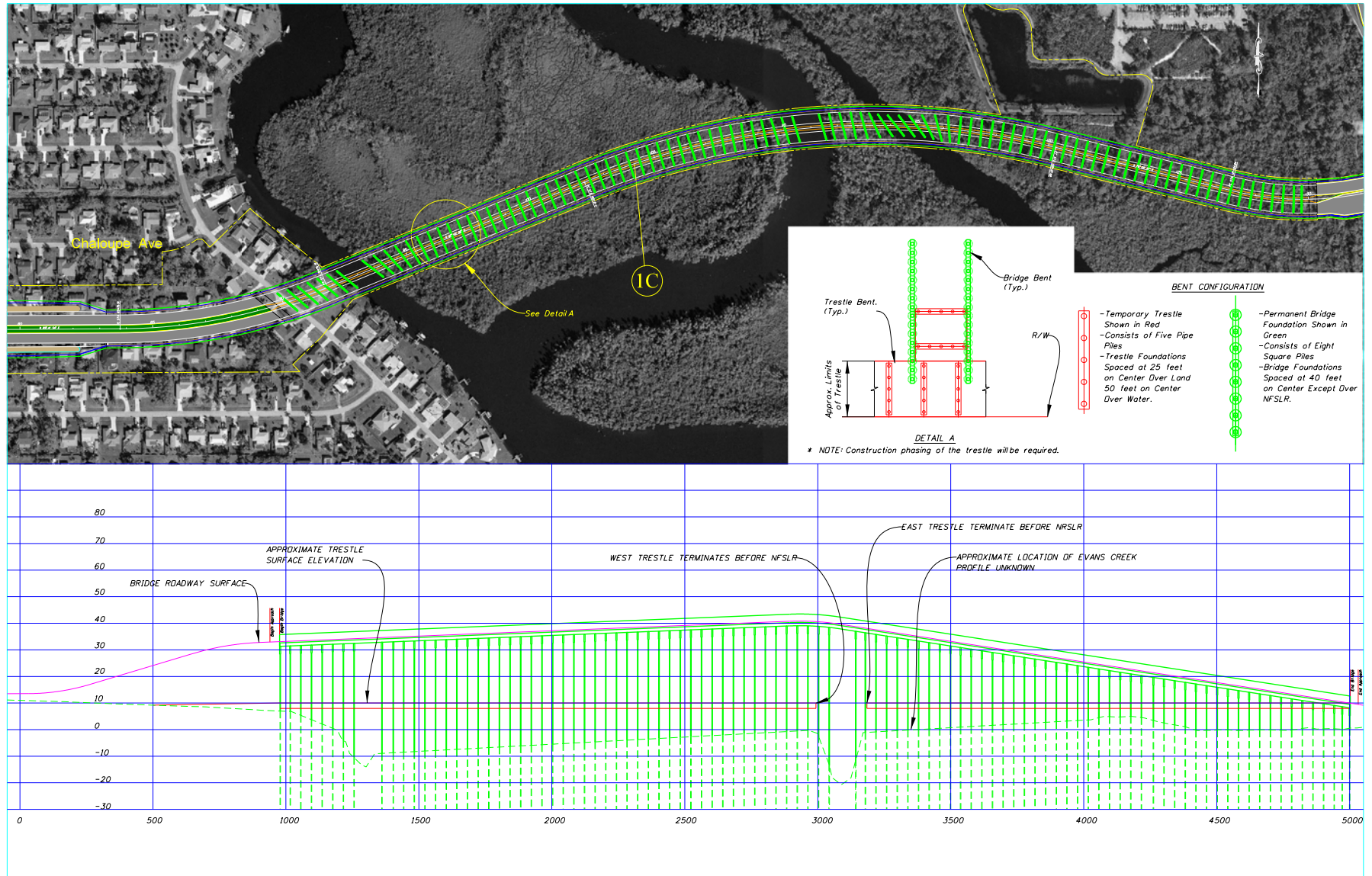
In addition, the Team performed a qualitative risk assessment and identified potential project risks that may be used by the City if they choose as the foundation of a Risk Management program for this project.

The Team produced a VE Report that is available at the FDOT District 4 offices, 3400 West Commercial Boulevard, Fort Lauderdale, Florida 33309 (a copy is also located in the project file). As documented in the VE Report, the Team came up with six recommendations that were forwarded to the City for their consideration. In their response of November 1, 2012 (**Appendix A**) the City agreed with two of the recommendations, deferred their decision on three recommendations until later in the design phase, and disagreed with one of the recommendations. The recommendations and the City's responses are summarized below.

Recommendation 1. 11-Foot Travel Lanes – This recommendation proposes to reduce the overall footprint of the bridge by reducing lanes widths.

Response: The City **agrees with the recommendation to reduce the footprint of the bridge**. After the VE meeting, coordination with NMFS, USFWS, and USACE continued regarding project impacts and mitigation. This resulted in the reduction of the bridge section from 143 feet to approximately 103 feet (102' 8") as noted in Section 3.3.2.2.1 (Impact Avoidance and Minimization of the Bridge Width). The reduction was accomplished in part by reducing two travel lanes in each direction to 11-foot travel lanes.

Recommendation 2. Thirsty Duck – This recommendation would result in a reduction to detention areas by enabling control structures to achieve a maximum discharge rate before the pond peak stage is reached.



(Alternative 1C)

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Crosstown Parkway Extension PD&E Study and
 Environmental Impact Statement
 Bridge Plan and Profile Preferred Alternative
 Figure 3.76

Response: This recommendation warrants further consideration, but there are concerns about the proprietary nature of the technology. Since this would be the only implementation of this system in the City, there is also a question about the City's costs to maintain the system. This recommendation will be considered further with the final decision being **deferred until later in the design phase**.

Recommendation 3. Pedestrian Access – This recommendation proposes to provide pedestrian access from Coral Reef to Crosstown Parkway via construction of a sidewalk.

Response: The City **agrees with this recommendation** and will carry it forward into the design phase.

Recommendation 4. Pedestrian Overlook – This recommendation proposes to provide an overlook/ pedestrian rest area over the navigation waterway within the SSL easement.

Response: A pedestrian overlook was considered earlier in the project development process, but eliminated due to concerns about shading impacts. The City remains open to the concept of providing overlooks on the landward side of the bridge. Final decision on this recommendation will be **deferred until later in the design phase**.

Recommendation 5. Eliminate MSE Walls (West Side) – This recommendation proposes to remove the proposed MSE walls and to use embankment instead.

Response: The use of an embankment would take up area needed for drainage ponds. Additionally, this would result in the lengthening of the sidewalk identified in Recommendation 3, locating it closer to the rear lots of adjacent homes which is not desirable. For these reasons, the City **respectfully disagrees with this recommendation**.

Recommendation 6. Design-Build – This recommendation proposes to investigate the option of utilizing the design-build method for the project.

Response: The City is maintaining an option in the design scope of services to allow for the project to be developed as a design-build contract. **Final decision on this recommendation will be deferred until later in the design phase**.

3.3.2.4 Proposed Construction Methods

The City has committed to build a bridge over the AP and the SPSP using a top down construction method, or construction from temporary platforms, trestles or other similar methods to avoid impacts to the maximum extent practicable. The description of construction methods is based on coordination with contractors familiar with this type of construction and represents the best available information at this stage of project development. The actual methods used to build the bridge may vary from these descriptions.

The construction impacts from this project as described in the EIS are based on the use of a trestle since this will provide a conservative estimate of the temporary impacts (based on the 103-foot bridge width along Alternative 1C). Consistent with standard industry practice, the trestle was assumed to be constructed using pipe piles for foundations and H-beams for framing and bracing. The deck of the trestle will consist of crane mats, which are 4 ft x 1 ft x various length timber beams placed adjacent to each other,

perpendicular to the length of the trestle (imagine a boardwalk or dock, with the surface boards pushed together). The trestle will traverse adjacent to the bridge within the bridge right of way. The trestle assumed for this project consists of pile bent foundations made up of five 24-inch diameter pipe piles. There are 25-foot spans between pile bents across uplands and wetlands and 50-foot spans between pile bents across open water. The overall width of the trestle will be 40 feet wide. Perpendicular "fingers" will be constructed within the bridge footprint to assist with construction.

The trestle will be constructed first, in a top-down fashion, building successive spans from the previous span. After the trestle is complete, it will be used to drive piles and place beams for the permanent bridge. The trestle can be designed to handle material delivery operations. The trestle will be low to the ground (approximately 10 feet) so any trees below the trestle must be cut before constructing it, and tree stumps and vegetation where the pile bents will be placed must be removed. The trestle will be constructed with a gap in the open water sufficient to maintain sufficient navigation clearance with a barge present. The use of barges as a construction platform is likely in the main channel to minimize impacts from a trestle, and ensure the channel remains open for navigation [Section 5.3.18 (Navigation)]. However, with the project commitments outlined in the EIS, temporary impacts will be minimal and passage by aquatic species will not be impeded. Use of barges will be coordinated through the permitting process. Additionally, the City has committed that haul roads will not be used in the wetland areas.

The first step of construction for the permanent bridge will be the removal of trees and stumps where the pile bents will be installed, and the cutting of trees in the bridge path that will interfere with the construction of the bridge (trees that could grow higher than the elevation of the bridge). To do this, the contractor will need light machinery; no haul roads beneath the bridge will be allowed. Foundations (piles) can then be placed from the trestle.

The construction time of the bridge can be reduced by using sequencing and accelerated bridge construction (ABC) techniques. For example, both bridges could be built at the same time by building the second from the top of the first. Another example is to build the bridges from both directions. Accelerated bridge techniques include using precast bridge elements (beams, bent caps, deck segments, etc.) to reduce the need to build forms and concrete curing time.

The proposed construction method using trestles (or other similar methods) avoids the need to stage materials or equipment in wetlands and wildlife habitat. Construction methods will limit actual permanent ground construction impacts to the piles themselves which will be installed from above. Temporary impacts will occur during the placement of piles for the temporary trestle and permanent bridge resulting from pile driving templates (steel framework required to align and plumb the piling), ground heave immediately adjacent to each pile, and any spoils due to shallow augering required to seat the piling prior to driving. The total quantity of temporary construction impacts resulting from the bridge piling is 0.12 acres in the AP and 1.05 acres in the SPSP.

The USACE expressed concern over the methods of geotechnical (soil borings) investigations in the natural habitats. To address this concern, the City has committed that during geotechnical/soil investigations specialized equipment, such as rubber tire mounted equipment, amphibious track rigs, rigs mounted on all-terrain vehicles, and tripod drill rigs, will be used to provide the least damaging methods to obtain geotechnical information. In addition, all applicable provisions contained in FDOT's *Standard Specifications for Road and Bridge Construction* will be followed to minimize impacts.